



DCMA



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Transformation to a Digital Workforce

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- Globally, the Pace of Change is Accelerating
- DCMA Technical Workforce of the Future will be Shaped by Four Major Trends:
 1. Outsourcing of Product Development and Manufacturing
 2. Automation – Additive Manufacturing (AM)
 3. Software and AI – Systems Requiring More Complex Software
 4. Education - Certifications that Provide Focused Modular Training
- Technical Professionals of the Future need to Possess Deeper and Broader Expertise Related to these Trends:
 - Our Workforce needs to Learn More and at a Faster Pace in order to be Agile Enough to Influence DoD Sector Trends and Contractor Performance
 - Critical Thinking & Problem Solving
- Accelerated Acquisition – Rapid Transition from R&E to Production

- DCMA's Programs Align with Agency Strategic Goals and Directly Support the 2018 National Defense Strategy (NDS)

QA Activity

- 21ST Century Workforce
- Digital Engineering/AM
- High Value/High Risk (HV/HR)
- Detection-to-Prevention (D2P)

DCMA Strategic Goal

- 4, 5
- 1, 2, 4, 5
- 1-5
- 1, 2, 4

DCMA - Strategic Goals

1. Enhance Lethality through On-Time Delivery of Quality Products
2. Enhance Lethality through Affordability
3. Ensure Agency Funds are used in Alignment with Department Guidance and Executed in a Transparent, Accountable Manner
4. Reform the Agency Business Practices by Working Smarter not Harder
5. Enhance and Strengthen the Skills, Readiness, and Effectiveness of the Total Workforce

- Leveraging of Independent System and Process Certification should be Expanded through Supply Chain Management to Reduce Redundant Audits and Oversight Costs
- Reducing Oversight Costs to Industry:
 - Refocus of LODs within the Supply Chains, Evaluating the Prime Contractors Effectiveness to Manage their Subcontractors per AS9100 Contract Requirements
 - Leveraging Credible Independent System and Process Certifications
- Improved Data Sharing with Prime Contractors:
 - Mutual Analysis of Contractor Data Eliminates Discussion about Who's Data is Correct and Reduces Costs to Develop Redundant Performance Data
 - Oversight Focus Shifts to Data Credibility Determinations

- Additive Manufacturing (AM):
 - Process surveillance to Contractors;:
 - Operational Procedures for AM Equipment
 - Certification of AM Operational Procedures
 - Acceptance based upon Contractor provided Objective Evidence
 - AM Challenges:
 - Homogeneity
 - Repeatability
- Enhanced Collaboration and DC&A
- Leverage Connectivity:
 - Virtual Inspection
 - Digital Radiology
 - OASIS
 - FAA Certifications
 - Digitized TDPs
 - 3D Drawings

- Skills Required to Collaborate with our Defense Industrial Base to Improve Performance:
 - Build Value Propositions with Contractors that Reduce Costs, Improve Delivery & Performance
 - Warfighters need Quality Systems & Supplies Delivered On-Time at Cost to Achieve Mission Success
 - Work with Contractors on Developing a Mutual Understanding of Risk Identification & Mitigation Based on their Data:
 - Eliminate Discussion of Who's Data is Correct
 - Transition to Evaluating the Creditability of Contractor Data Rather than Replicating Like Type Information
 - Work to Identify and Reduce Failure Costs which Impact Delivery and Drive up Costs
 - Work with Contractors to do it right the first time!
- Advanced Analytical Competencies Now Required for Data Collection and Analysis:
 - ASQ Agency Membership – remain current on Specs & Standards, New Manufacturing Technologies
 - Professional Certifications Available:
 - Certified Quality Engineer - CQE (ASQ) (DoE, Advanced Statistics, FMEA, FMECA, FTA, etc.)
 - Certified Quality Process Analyst – CQPA (ASQ)
 - Certified Quality Auditor – CQA (ASQ)
 - Certified Manufacturing Engineer – CMfgE (SME)

- Evaluate Processes Early; Are they Woven into Product Design and Manufacturing Phases to Prevent Errors
- Voting Member on SAE Commercial Standards
- Track Time & Money Spent correcting Errors & Repeating Tasks:
 - Jointly Develop the Value in Reducing Failure Costs & its Impact on Cost, Schedule, Performance
 - Reevaluation and Re-Inspection Costs submitted to the ACO for Redress
- Utilize a More Analytical and Predictive Approach:
 - Evaluate & Provide Potential impacts (Cost, Schedule, Performance) to the Program Offices from LRIP Analysis before Production Authorization
 - Collaborate to ensure the Contractor has an Effective Process for Defining Critical Processes & Characteristics
 - Collaborate to ensure the Contractor has Effective Controls & Metrics for all Critical Processes and Technical Characteristics

- Expand the use of Corrective Action Requests:
 - Issue CARs on Delayed Deliveries
 - Ensure CARs Written Against Sub-Tier Contractors are provided to Prime Contractors and the Government:
 - Hold Prime Contractors Accountable for Managing their Suppliers
 - Issue CARs when the Contractor Fails to Execute in Accordance with their Accepted Command Media, including their Purchasing System
 - Execute LODs in accordance with the new Delegation Surveillance Manual
- Develop Metrics based on Cost, Schedule & Performance ROI:
 - Baseline Process Capabilities to Design Requirements
 - Collaborate with Contractors to Reduce Variability and Improve First-Pass-Yields
 - Show Impact in Reduced Failure Costs & Improved Schedule Performance

- Realigning DCMA resources to higher risk work:
 - High Value/High Risk Workload
 - Improved Supply Chain Evaluations
 - Predictive Analysis of Delivery Performance
 - Continuous Process Improvement to Yield Enhanced Performance at Reduced Costs
 - Support increased Warfighter Lethality and Readiness

Expanded Strategic Objective: Redirect Resources to more Preventive Efforts by Leveraging Existing Credible Contractor and Independent Data, thereby Eliminating the Creation of Redundant Performance Data by the DCMA Workforce

- OASIS 3rd Party QMS Certifications
- Mapping of Critical Characteristics to Applicable Manufacturing and Assembly Processes for Capability and Risk Assessments
- Evaluation of Outsourced MRB Approvals of Parts on System Reliability
- NADCAP Process Certifications
- FAA Evaluation Data
- Evaluation of Contractor's Inspection System – *Acceptable to the Government*
- Contractor Purchase System Risk Evaluation
- LRIP Risk Assessment Prior to Production
- Digitized TDP – 3D Drawings
- Virtual Inspection Data
- Improved Objective Evidence for Product Acceptance

- OASIS:
 - Job Aid Published & Metrics Developed in Collaboration with Operational Units
 - Ensure Level II & Level III CARs are loaded into OASIS by the Contractor
 - White Paper Issued by AIA Recommending Adoption of OASIS by its Member Contractors based on Pilots completed
 - On-Going Meetings are being held with Major Prime Contractors to Expand the use of OASIS into their Supply Chains
 - Training is underway at the CMOs – Regions taking the lead
 - Use 3rd Party QMS Audit Reports in Developing Surveillance Activities
- MRB Pilot:
 - Contractor Proceeds with Production at their Own Risk
 - 100% of MRBs reviewed by DCMA
 - MRBs will be Forwarded to the ACO with Associated DCMA Costs for Consideration and Close Out
 - Final Evaluation for Agency Adoption coming soon

New Projects

- Virtual Inspection:
 - Demonstrated in 2018 to QA SES - Approval to Proceed Granted
 - Charter Currently Under Development
 - Contractor to Provide Access to Improved Objective Evidence of Supplier Parts & Subassemblies Technical Conformance prior to their Acceptance and Authorization to Ship
 - Further Reduces Risk and LOD Requirements
- FAA Data Sharing:
 - Agreement reached in August with FAA Director of Policy Oversight Surveillance to share Contractor Performance Data
 - Draft MOA Currently Under Development

Industrial Engineering

Improved Operations & Production Evaluation and Surveillance:

- Collaborate with Prime Contractors on Advanced Analyses of Potential Impacts on Delivery of Weapon Systems
- Enhanced Predictive Analyses of Supply Chain and Production Impacts on the Integrated Master Schedule (IMS)
- Contractor Facility Capacity Evaluation and Analysis

Quality Assurance Engineering

Perform Data Analysis required to Identify/Evaluate Risk in order to:

- Verify Contractors adhere to Contractual Requirements and Provide Quality Products and Services
- Prioritize DCMA Quality Assurance (QA) activities at Contractors' Facilities
- Higher Level Data Analyses and Process Capability Evaluations and Studies
- Predictive Risk Analyses utilizing FMEA, FMECA, FRACAS and FTA Documents

3RD Party Certification Supports DCMA's – "Detection to Prevention" Efforts:

- Develop Partnership between DCMA and Industry to Leverage Potential Third-Party Counterfeit Mitigation Certification Audit results in order to Reduce Duplicative DCMA Oversight
- Leverage Corrective Action Capability of 3rd Party Certification Scheme
- Work with Prime Contractors to Assess Supplier Performance and Risk to Refocus DCMA LODs

DFARS 252.246-7007 and 252.246-7008 requires **"Flow Down"** at all Levels of the DoD Supply Chain as necessary to Establish and Maintain an Acceptable Counterfeit Detection and Avoidance System

Regardless of what is Flowed Down, Contractors Must Provide **"Traceability"** back to the Original Manufacturer; Inspection and Testing Utilized when Traceability is Unavailable

LOD – Letter of Delegation

Potential 3rd Party Certification OPTIONS:

- MAY provide Improved Objective Evidence for Risk Evaluation and Surveillance Planning
- Supports consistent Counterfeit Mitigation efforts throughout the Supply Chain
- Less Contractor Resources needed to support Government Audits
- Facilitates Cooperation and Transparency throughout the Supply Chain

- Transition from Detection to Prevention is not always a Static Process, things may change over time
- Workforce must remain aware of potential changes during Surveillance Planning & Execution
- When the Contractor makes significant changes that could Impact Cost, Schedule and/or Performance, a new Risk Evaluation is required
 - Examples of some of these Changes or Tripwires:
 - Place of Performance
 - Revised Manufacturing or Assembly Processes
 - Revisions in Command Media or Contractor SOPs & Work Instructions
 - Revised classification of Critical Technical Characteristics, Material Treatment, or Assembly Processes
 - Change in Contractor System or Process Controls or Test & Inspection Requirements
 - Change in Contractor Management, i.e. Quality Control, Operations, or Calibration Managers
 - Change in Personnel Training or Certification Requirements

- Value-added D2P Projects are Underway
- Industry/DCMA Collaboration is Critical to Success
- Continued and Expanded Collaboration is Highly Desirable
- Working Hard to Reduce the Burden of Oversight Activities on Industry
- Sharing Data Collection, Analysis, and Risk Mitigation is a Win-Win for Everyone:
 - Improved Schedule
 - Reduce Rework/Scrap
 - Ability to Rapidly Respond to Customer Requests for Should Cost
 - Improved Technical and Business Base Forecasting and Contract Flow Down
- Development of Joint Oversight Surveillance Activities Needs to Continue



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