

# OSD Manufacturing Technology Overview

## DMC 2008



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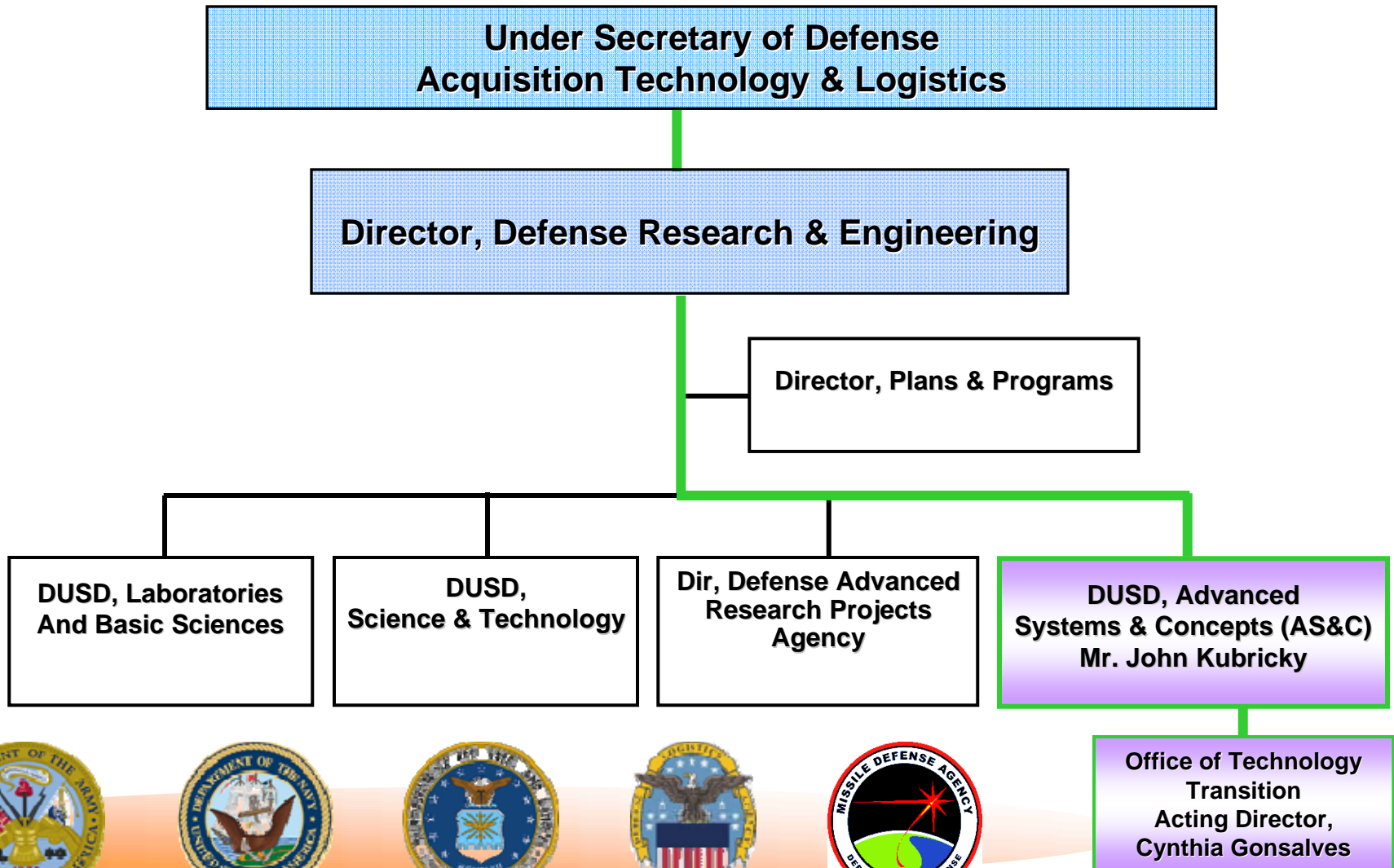


# Topics

- Manufacturing S&T Program (OSD D-Line)
- Manufacturing Readiness Level (MRL)
- GAO Study on MRLs and Manufacturing Readiness
- Congressional Interests
- Industrial Base Innovation Fund (IBIF)
- Strategic Planning
- Summary



# AT&L Chain of Command





# Mfg Science and Technology Program (MS&T)



## Cross-cutting defense manufacturing needs

- Focus is on design for manufacturability early in development to achieve largest cost-effective impact
- Return on Investment (ROI) – mature manufacturing processes
  - Decrease production costs
  - Decrease time to production – improved cycle time
  - Increase affordability – unit costs and life cycle costs
  - Accelerate enabling technologies
- Management and execution

*Manufacturing Science and Technology (MS&T) - PE 0603680D8Z*

FY 08 Budgeted/ Appr	FY 09	FY 10	FY 11	FY 12	FY 13
10/23.6	12.0	14.9	19.9	19.9	24.8



# FY08 Funding Areas

- **Congressional Add: High Performance Defense Manufacturing Technology Research and Development, \$8M**
  - To **identify and transition advanced manufacturing processes** and technologies whose utilization would create significant productivity and efficiency gains in the defense manufacturing base
  - Includes development of **test beds and prototypes** of advanced manufacturing technologies, diffusion of advanced manufacturing processes throughout the industrial base, and the development of **technology roadmaps**
- **Congressional Add: Disruptive Manufacturing Technologies Research, \$8M**
  - To **radically alter the defense industrial base through development of “disruptive” manufacturing processes**. Allow faster and more affordable access to low-volume, state-of-the-art production capabilities for acquisition defense unique technologies of low density, high demand systems.
  - Specifically includes nanomanufacturing and flexible manufacturing processes
  - Mature manufacturing processes needed to **transition emerging, disruptive technologies** which offer leap-ahead capability for future warfighting within the next decade



# MRL - Background

## *Immature technology & unstable manufacturing processes are major acquisition drivers*

- Recent GAO study of 72 programs: RDT&E costs up by 42% with schedule slippage of 20%

## *Manufacturing Readiness Levels (MRL) Developed*

- Common Standard and framework for identifying, communicating, and managing manufacturing risks
- Establish and promote manufacturing risk management as basic principal of technology development and acquisition programs
- Establish DoD standard for manufacturing readiness to support decision makers at key milestones
  - Milestone A – MRL4
  - Milestone B – MRL 6
  - Milestone C – MRL 8
  - FRP Decision – MRL 9
- Support the development and maintenance of necessary knowledge and skills within the DoD workforce to support this best practice already used by key U.S. defense industries

*Equip the DoD Enterprise with Knowledge Based Approach to Manufacturing Risk Management - Standard, Tools, and Training*



# MRL/MRA Body of Knowledge



- Sufficient for programs to conduct assessments
- Continues to mature through JDMTP activities, lessons learned, and integration within the defense acquisition system elements.
  - MRL Definitions, Criteria Matrix, Deskbook
- JDMTP MRL Working Group continues monthly meeting to refine resources and toolset
- Sept workshop on refining early MRL levels (MRL 1-3)

All MR products are available at [www.dodmrl.org](http://www.dodmrl.org)



# Manufacturing Activities



- Collaboration within OSD to align manufacturing activities to existing acquisition and technical reviews
- Integrate Manufacturing Readiness activities into the Systems Engineering Process
- DAG – being updated to reflect increased focus on mfg early in acquisition development (TDS and Acq Strategy)
- 5000.2 signed 2 December 2008 by AT&L





# MRL Training and Outreach



- MRL/MRA DAU training:
  - Executive level briefing
  - Integrated into the PQM curriculum
  - Continuous Learning Module under development for distance learning opportunities
  - MRL Materials available on DAU Website (PQM Community of Practice)  
<https://acc.dau.mil/CommunityBrowser.aspx?id=18231>
- Two technical sessions scheduled for DMC 2008, in December.
  - MRL/MRA Toolset
  - Tutorial on MRL body of knowledge, including conducting MRAs

**All MR products are available at [www.dodmrl.org](http://www.dodmrl.org)**



# GAO Study on MRL and Integration RL Implementation



- **In brief Thursday, 13 November**
- **OSD, Services/Agencies**
- **Industry Participants Wanted**
- **More to Come**



# Congressional Interest



- **High Performance Mfg R&D Report – complete and delivered to the Hill**
- **Implementation Report on FY03-FY05 Projects – in coordination**
  - 100+ projects with \$Bs of impact
- **Strategic Plan**
- **Industrial Base Innovation Fund (IBIF)**
  - FY08 projects posted on IP website
  - FY 09 BAA



# Industrial Base Innovation Fund



- FY 09 - \$19 million add
- BAA amount: \$10 million
- 8 Dec: JDMTP submits topics to DLA
- 9 Jan: BAA advertised in FED BIZ OPS
- Early Feb: Pre-proposal Conference
- 6 Mar: BAA closes
- Early Summer: Selectees announced



# ManTech Strategic Plan



- Government and industry engagements/interviews
- Emerging strategic messages:
  - Strong, positive support for ManTech program in all camps; recurring calls for bold thinking
  - Affordability remains an overarching concern
  - Institutional focus on "Manufacturability" is strategically important--keep championing the MRA concept
  - Workforce concerns are pervasive; responsibility for solution sets not clear



# ManTech Strategic Plan



- Expect the plan to:
  - Emphasize affordability as a "focusing theme"
  - Leverage existing program strengths--much is going well
  - Expand the focus on 21st Century trends and a global, collaborative context for framing ManTech investments--joint/crosscutting capabilities & enablers are key
  - Provide direction for model-based & network-centric approaches to enhance common operating pictures, product data exchange, supply chain integration
  - Posture the ManTech program as a strategically important tool for DoD leadership priorities in S&T, acquisition, and sustainment
- Now moving into full plan development & coordination phases
- FY10 PB to Congress



# Manufacturing Technology - Summary

Manufacturing Technology				
Strategic	Program	MRA Capability	Daily	Growth
<ul style="list-style-type: none"> <li>• JDMTP</li> <li>✓ Strategic Planning</li> <li>✓ Industry Outreach</li> <li>✓ Workforce Development</li> <li>✓ Stakeholder Awareness</li> <li>✓ Congressional</li> </ul>	<ul style="list-style-type: none"> <li>✓ Manf S&amp;T</li> <li>✓ Pm, Financial, Technical</li> <li>✓ Disruptive</li> <li>✓ Hi Perf</li> <li>✓ Long Term Planning</li> <li>✓ AF Exec Agent</li> </ul>	<ul style="list-style-type: none"> <li>✓ MRL/MRA Development</li> <li>✓ MRL WG</li> <li>✓ Documentation</li> <li>✓ Policy</li> <li>✓ DDR&amp;E MRA Capability</li> <li>✓ DAB Support</li> </ul>	<ul style="list-style-type: none"> <li>• Daily Activities</li> <li>• Reporting Requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Workforce Skill Sets</li> <li>• Benchmarking Studies</li> <li>• Roadmapping</li> <li>• Investment Synergy</li> <li>• Tech Surprise</li> </ul>

