

Manufacturing Readiness Levels (MRL) – Executive Overview

Goal of MRLs?

- To address manufacturing and quality risk and issues throughout the development process to provide products that consistently meet customer requirements

Benefits of MRL

- Enables manufacturability and producibility of the product design are assessed early in development
- Provides programs a well-documented process/roadmap to achieve manufacturing maturity
- Provides early understanding of manufacturing risk and maturation
- Manages manufacturing maturity throughout the program's supply chain and customer base
- Identifies systemic manufacturing problems across your programs, contractors, and the industrial base

Development of MRLs – through the MRL Working Group

- MRLs have been in development and use for over 15 years
- The MRL Working Group meets regularly to collaboratively improve the process and tools
 - o Open participation among government, industry, and academia
- The working group host an annual workshop to develop and review proposed changes with the user community before deployment

Deployment of MRL

- Industry partners are using MRLs in both their government and commercial business sectors
- SAE Industry Standard AS6500 requires use of MRL
- Some service policy is requiring MRLs on acquisition contracts
- Congressional language in law requires MRLs on key acquisition programs
- GAO identifies the use of MRL as a best practice

MRL Challenges

- Unrealistic Expectations -- MRLs do not solve problems; they assist in identifying risk and issues
- Concern that programs will have delays when manufacturing maturity is not achieving the target MRL
- Inconsistent understanding and interpretation of how to apply MRLs
- Workforce inadequately trained to effectively and efficiently deploy MRLs
- Perceived cost/benefit of using MRLs has been hard to quantify – but so is applying standard systems engineering

What's Next for MRL

- Continue to refine and improve the MRL process through...
 - o Quarterly MRL Working Group meetings
 - o Annual MRL Industry Workshop
 - o MRL sessions at the annual Defense Manufacturing Conference
- Continue to educate the workforce on effective use MRLs
 - o AFIT SYS213 - Management of the Mfg Readiness Process, Air Force Advanced MRL class at Miami (OH) University
 - o Expand MRL info at DAU and into various DAU courses
- Increase the participation of MRL users – especially smaller businesses in the MRL Working Group

Key MRL Products and Tools

- MRL Deskbook, MRL Users Guide, MRL Criteria Matrix, DOCENT MRA Tool, and others
- Located at www.dodmrl.org

