



SD-22 Revision Status

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Parts Standardization & Management Committee
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Institute for Defense Analyses



SD-22



***Diminishing
Manufacturing Sources
and Material Shortages
(DMSMS)—***

***A Guidebook of Best
Practices and Tools for
Implementing a Robust
DMSMS Management
Program***



Reasons for the Revision



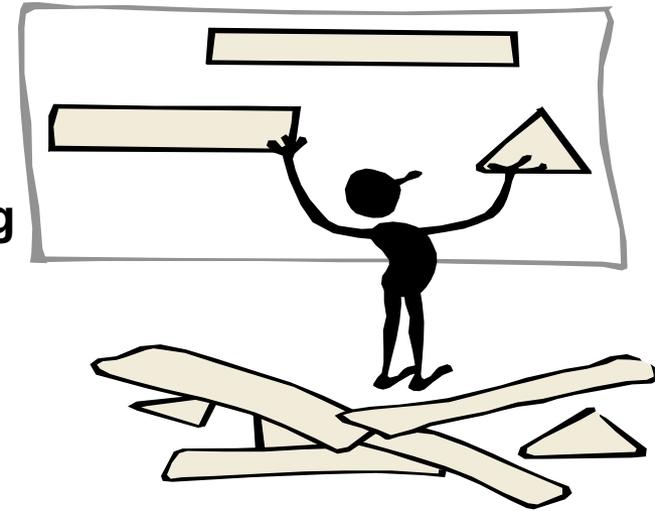
- Improve linkages with the systems engineering community – DMSMS affects the design concept
- Update linkages with the logistics community – new product support manager policy and guidance has been issued
- Introduce new resolution ontology and cost factor approach
- Provide more “how to” information by establishing DMSMS best practices for *all* DMSMS processes
- Increase utility to the program management community
- Establish a basis for more comprehensive DMSMS training for practitioners and for those acquisition career fields that should interface with practitioners



Revision Process



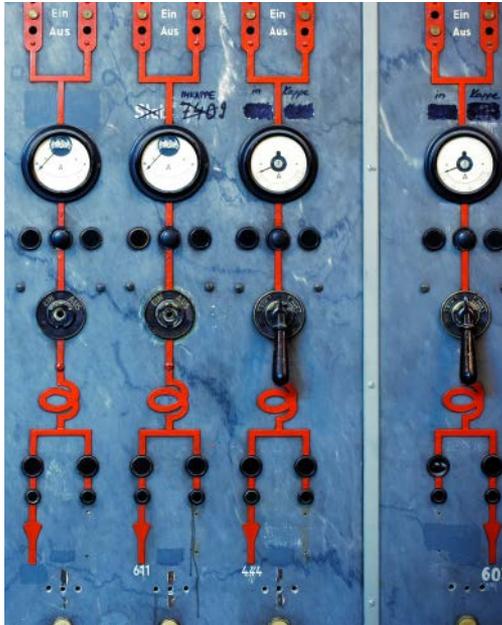
- **Community effort**
 - Initial outline developed by DMSMS WG
 - First draft writing assignments divided among key subject matter experts (SMEs) from the Services, Defense Agencies and DoE
 - Lengthy face to face comment sessions with chapter authors and other SMES
- **Current status**
 - Draft final version distributed to government- and industry-wide audience for final comment, due April 27
 - Detailed review planned with small industry SME group involved in writing GEIA STD-0016
 - Final opportunity to comment: May DMSMS WG meeting
- **New version to be published prior to the August Standardization and DMSMS Conference**





What is DMSMS?

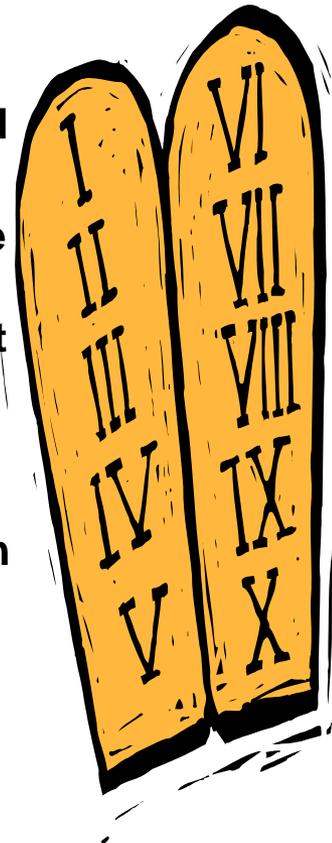
- **DMSMS is the loss, or impending loss, of manufacturers of items or suppliers of items or raw materials**
 - **DoD loses a manufacturer or supplier when that manufacturer or supplier discontinues production of needed components or raw materials, or the supply of raw material is no longer available**
 - **This can be caused by many factors including low volume market demand, new or evolving science or technology, detection limits, toxicity values, and/or regulations related to chemicals and materials**





DMSMS Policy

- DoD 4140.1-R, *DoD Supply Chain Materiel Management Regulation*, directs that DoD Components shall:
 - “[P]roactively take timely and effective actions to identify and minimize the DMSMS impact on DOD acquisition and logistics support efforts.”
 - “[D]evelop a process to resolve problems created by DMSMS and reduce or eliminate any negative impacts.”
 - “[P]roactively consider DMSMS through[out] a system's life cycle by anticipating potential DMSMS occurrences and taking appropriate logistics, acquisition, and budgeting steps to prevent DMSMS from adversely affecting readiness or total ownership cost.”
 - “[A]ggressively pursue ... actions,” when an item is identified to have a DMSMS problem “, particularly, when those items threaten to degrade weapon system readiness below established goals.”
 - “[E]stablish DMSMS programs that shall reduce or eliminate the cost and schedule impacts of all identified DMSMS problems and help ensure that DMSMS problems do not prevent weapon system readiness and performance goals from being met.”





Why is Robust DMSMS Management Important?



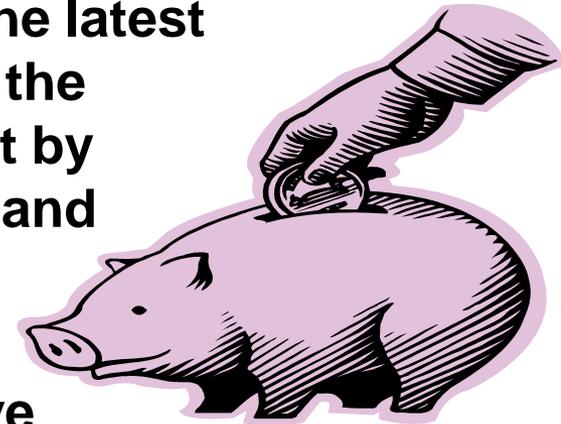
- Prevent potential detrimental impact on materiel readiness, operational mission capability, and safety of personnel
- Enhance affordability by avoiding significant costs in the future • • •



DMSMS Management Contributions to the Better Buying Power Initiatives (1 of 2)



- **Target affordability and control cost growth**
 - Factoring considerations, such as modular open systems and using standardized parts and the latest technologies into design trades, can reduce the impact of DMSMS issues during sustainment by enhancing the interchangeability, reliability, and availability of parts
 - Proactive DMSMS management may enable programs to control cost and thereby achieve “should cost” estimates
- **Incentivize productivity and innovation in industry**
 - DMSMS management cultivates long term supplier relationships
 - Decreases the likelihood of product discontinuation
 - Increases the likelihood of advanced notice of changes

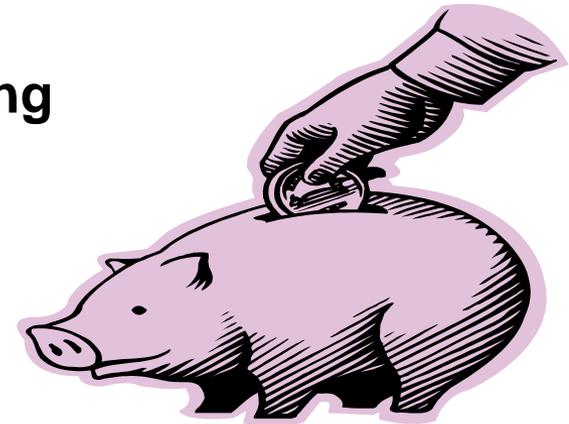




DMSMS Management Contributions to the Better Buying Power Initiatives (2 of 2)



- **Promote real competition**
 - An alternate source may be developed as a mitigation approach
 - Enabled by open systems architecture, having data rights for technical information, and decomposing a system into components
- **Improve tradecraft in services acquisition**
 - Service contracts are often used for weapon system support with a requirement for the contractor to manage DMSMS
 - Contractors should be incentivized to perform robust DMSMS management
 - Effective metrics and notification of issues to the government are key





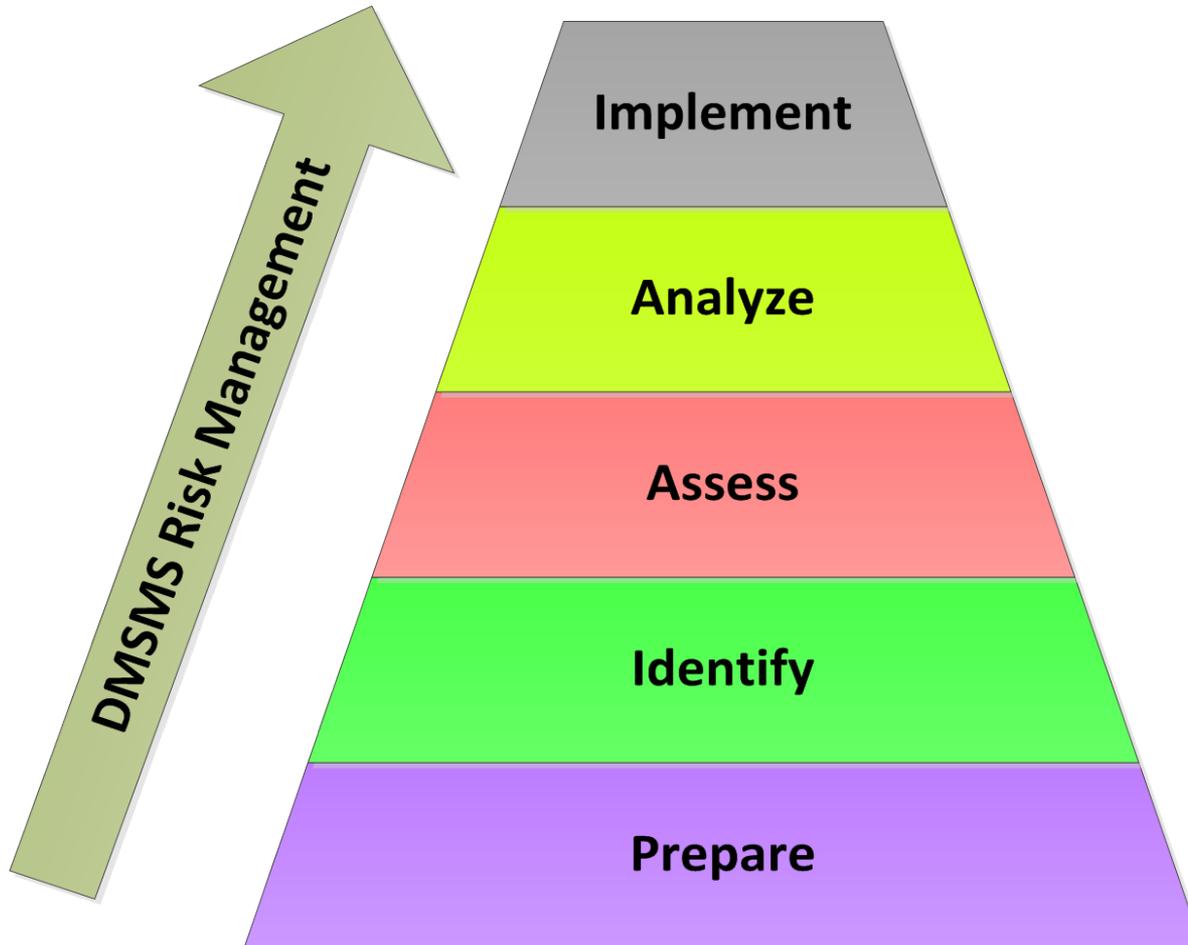
Cost Avoidance Examples



- **B-1 program**
 - OEM informed the government that the offensive radar system was experiencing obsolescence; recommended a system upgrade that would cost \$350 million
 - Obsolescence and supportability issues were easily overcome with an estimated ten year cost avoidance of \$316 million
- **Apache program**
 - Obsolescence working group shares power equally between the government and contractor to resolve issues
 - The benefit has been no part shortages or schedule delays and the identification of funding to mitigate obsolescence
 - The success of this model is represented by over \$200 million in cost avoidance
- **Foreign military sales (FMS)**
 - An obsolete part was needed for test sets used by FMS customers
 - The OEM quoted a cost of \$2.6 million for redesign
 - The FMS DMSMS team found an alternative source resulting in a \$2.3 million cost avoidance

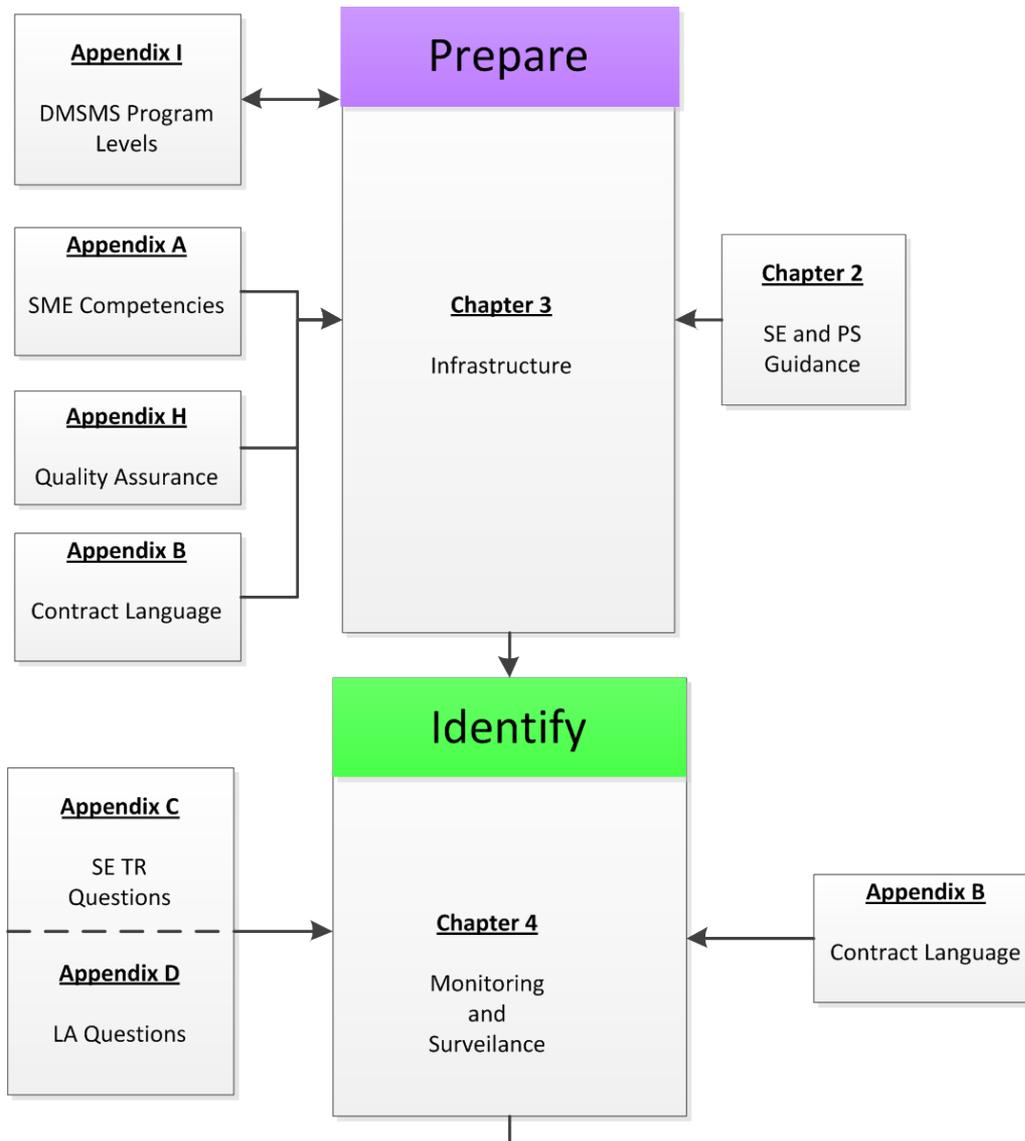


Sequence of DMSMS Risk Management Elements



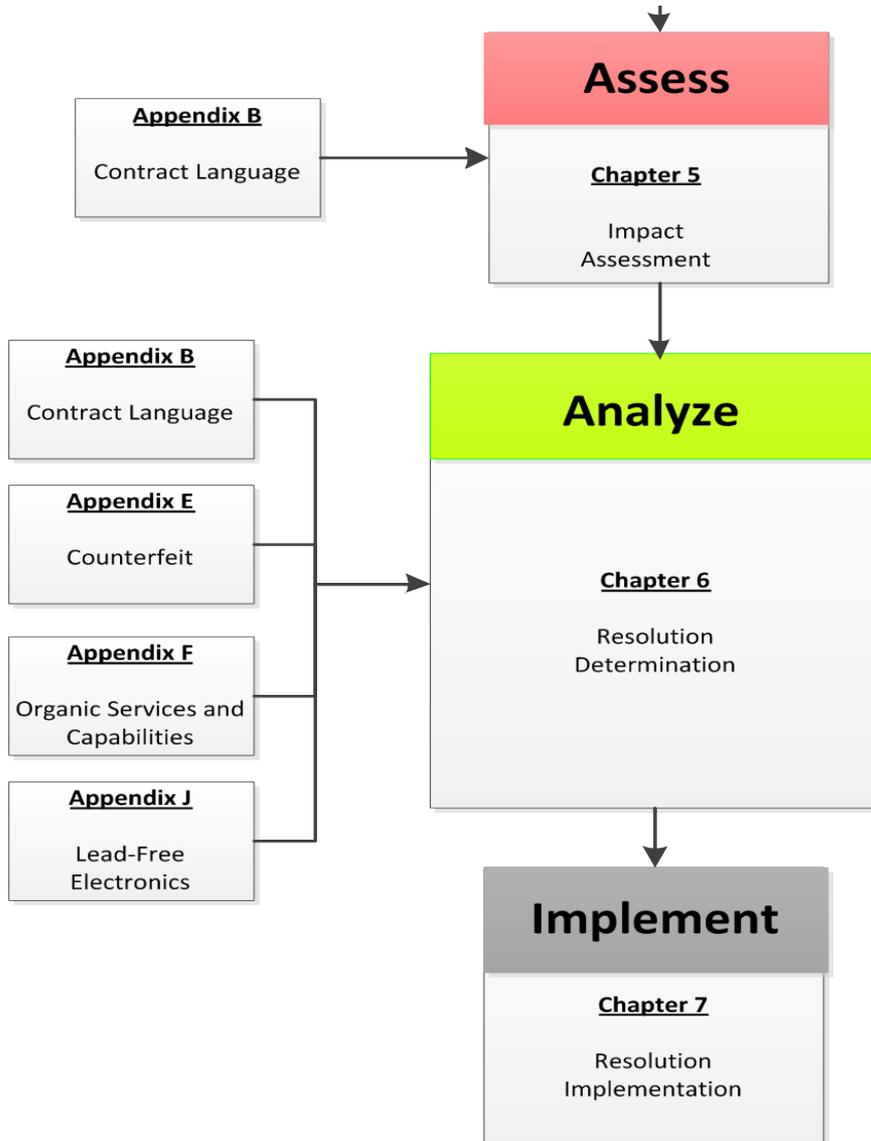


SD-22 Organized by Risk Management Elements (1 of 2)



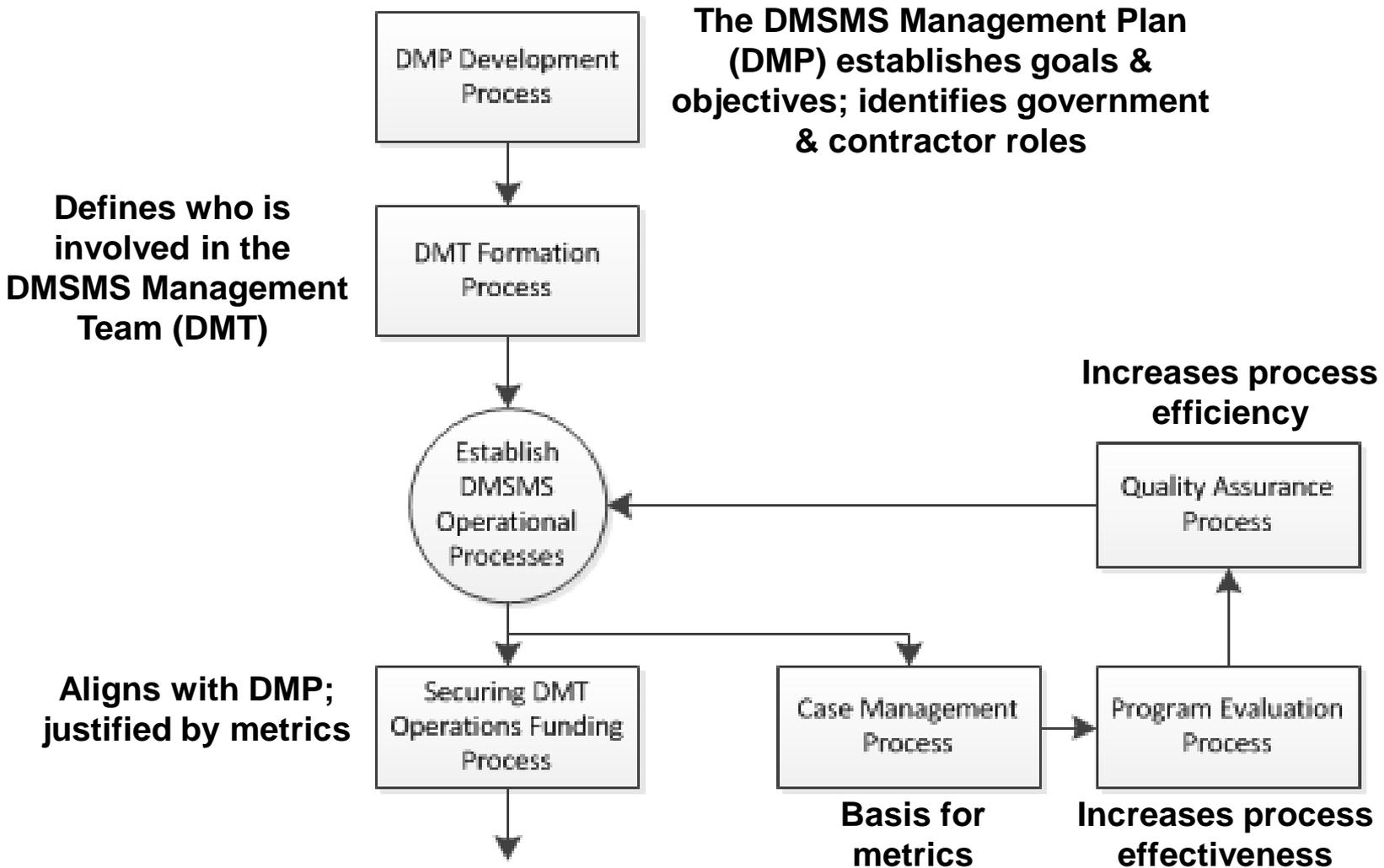


SD-22 Organized by Risk Management Elements (2 of 2)



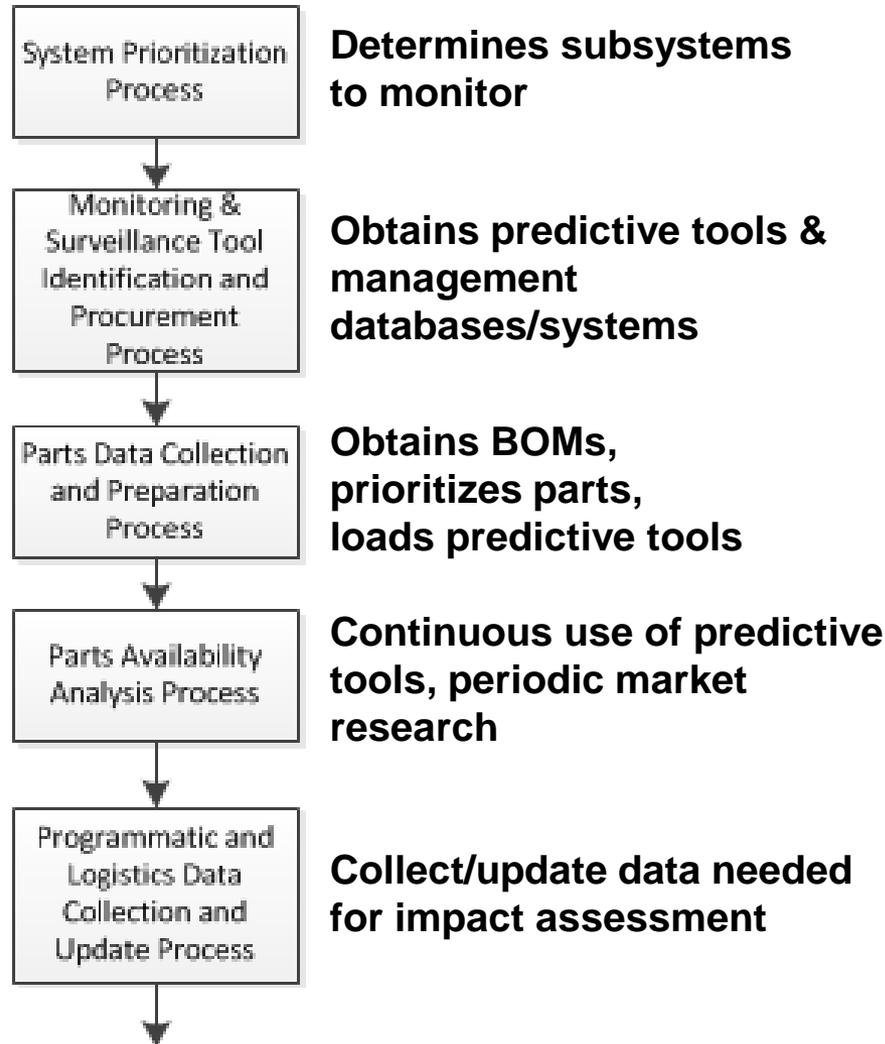


Prepare Processes





Identify Processes





Assess Process



- **Single process**
- **Answers three questions**
 - **Should a resolution to the problem be pursued?**
 - **Which problem should be addressed first?**
 - **At what level should a resolution be applied?**
- **Answers based on the following for the item and for a higher level of assembly**
 - **Programmatic data: acquisition phase, planned technology refreshments, planned usage of the item**
 - **Item availability data from predictive tools/market surveys**
 - **Item criticality and cost**
 - **Logistics data: maintenance philosophy, days of supply calculated from number on-hand, failure rates, and usage**



Analyze Process

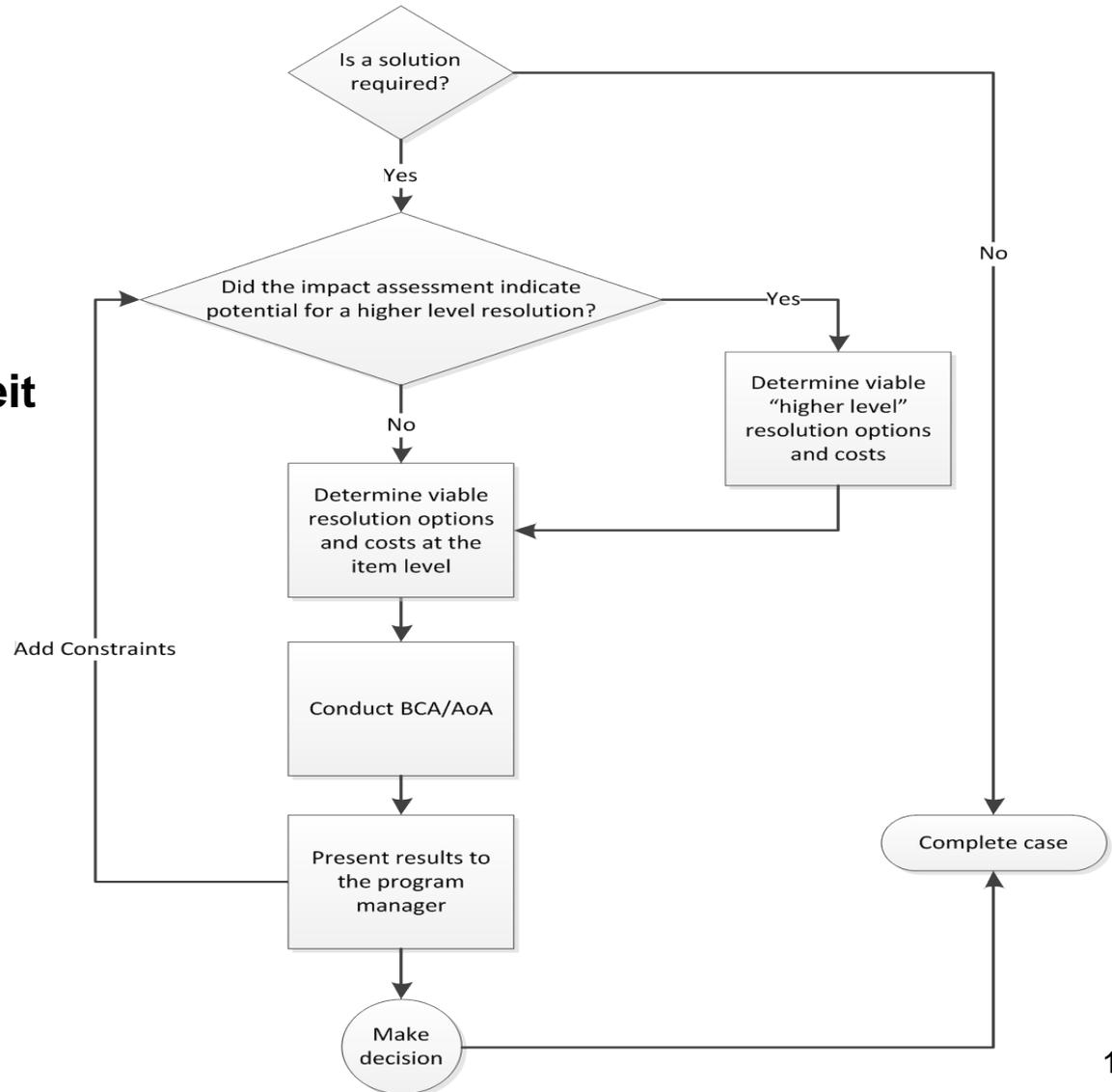
- **Considers**

- **All cost elements affected by resolution**

- **Prevalence of Pb-free and counterfeit affects resolution cost**

- **All resolution options at different levels of assembly**

- **Existing material**
- **Substitute**
- **Redesign**

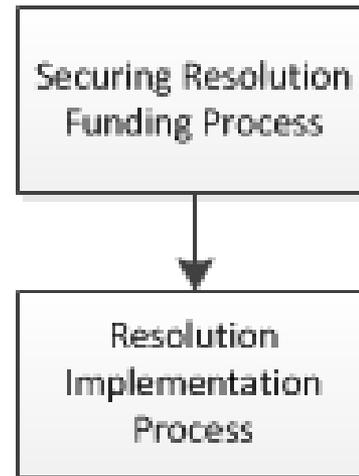




Implement Processes



- **Program and budget for resolutions**
- **Consider alternate sources**
 - Value engineering
 - Pots of money
- **Implementation considerations**
 - Clear steps, roles, and responsibilities
 - Monitoring progress
 - Dealing with roadblocks





Questions

