DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
RESEARCH, DEVELOPMENT AND ACQUISITION
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MEMORANDUM FOR DISTRIBUTION

Subj: EVALUATION CRITERIA FOR DIMINISHING MANUFACTURING SOURCES AND MATERIAL SHORTAGES (DMSMS)

Ref: (a) SECNAVINST 4105.1A, "Independent Logistics Assessment and Certification Criteria"
(b) NAVSO P-3692, "Independent Logistics Assessment Handbook" dated December 2003

Encl: (1) Addendum to NAVSO P-3692, "Independent Logistics Assessment Handbook" dated December 2003

Reference (a) establishes the policy for conducting Independent Logistics Assessments (ILAs) within the Department of the Navy (DoN). Part I of reference (b) defines the methodology for conducting ILAs. It includes specific evaluation criteria needing to be assessed prior to Milestones B and C as well as the Full-Rate Production (FRP) Decision.

Diminishing Manufacturing Sources and Material Shortages (DMSMS) pose significant risk to the continuous supportability of DoN systems at an affordable cost. Since release of reference (b) and subsequent ILA reviews, DMSMS has received increasing attention and become a top focus area of the Assistant Secretary of the Navy (Research, Development and Acquisition) (ASN (RD&A)). To assist in mitigating this risk, we developed enclosure (1). I am forwarding enclosure (1), which replaces Page 7 of reference (b), pending formal incorporation during the next revision to the ILA Handbook. I expect it will be used by all Program Managers and in all subsequent ILAs.

Nicholas J. Kunesh
Deputy Assistant Secretary of the Navy
(Logistics)

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Enclosure (1)

Addendum to NAVSO P-3692, "Independent Logistics Assessment Handbook" December 2003"

Design Interface

Evaluation Criteria	Milestone B	Milestone C	Milestone FRP
5. Parts and Materials Selection			
• Guidance and/or requirements should be documented in a parts and materials design guide before the start of design, addressing parts selection, derating and testability factors. Adherence to the guidelines should be verified at design reviews.	X	U	U
• ~~The order of precedence for parts selection emphasizes the use of qualified manufacturers lists parts, particularly for applications requiring extended temperature ranges.~~	~~X~~	↓	↓
• ~~A preferred parts list is required prior to detailed design.~~	~~X~~		
• ~~Shelf and operating life requirements have been identified.~~	~~X~~		
• Identification of Commercial-Off-The Shelf (COTS)/Non-Development Item (NDI) reliability is required.	X	↓	
• Parts and materials selected are qualified to the worst case DRMP and detail design environments. Uprating or upscreening of parts is not a best practice and should not be performed.	X	~~X~~	
• Parts derating is required for all electronic/electrical components. Electrical parameters of parts are characterized to requirements derived from the DRMP to ensure that all selected parts are reliable for the proposed application.	X	~~X~~	
• Highly integrated parts (e.g., application specific integrated circuits) are used to reduce: – The number of individual discrete parts/chips. – The number of interconnections. – Size, power consumption and cooling requirements. – Failure rates.	X	~~X~~	
• The critical items list has been developed and includes: – Any item of high technical risk with no workaround. – Items with schedule/delivery risk. – Sole source items. – High failure rate items. – Safety of flight items.	X	~~X~~	
• ~~A Diminishing Manufacturing Sources and Material Shortages (DMSMS) program and technology insertion program has been established.~~		~~X~~	
• ~~A COTS refresh program has been established.~~		~~X~~	
• COTS/NDI parts and their applications meet DRMP.		X	↓

Design Interface

Evaluation Criteria	Milestone B	C	FRP
6. Diminishing Manufacturing Sources and Material Shortages			
• A formal Diminishing Manufacturing Sources and Material Shortages (DMSMS) program has been established. This should contain a system technology roadmap, initiated at milestone A, that includes the following: – Identification of critical items/technologies. – Identification of emerging technologies. – DMSMS forecast integrated into technology refresh planning.	X	U	U
• Technology insertion/refresh, if used to mitigate obsolescence, includes the following: – A formal plan/strategy to specifically identify DMSMS insertion/refresh requirements. – Established intervals agreed to by the program sponsor. – Approved funding plan over the system life cycle for each scheduled insertion/refresh.			
• DMSMS forecasting/management tools and or service providers have been researched and selected.			
• Forecasting for obsolescence and product timelines has been conducted and considers: – Product (revisions and generation/technology changes). – Supplier base. – Contract period and life cycle.			
• On-going review of the parts lists and Bill-Of-Material (BOM) to identify obsolescence/ discontinuance issues is conducted.			
• A strategy for DMSMS design & manufacturing documentation has been developed and considers: – Design disclosed items, including sub-tier hardware indenture levels. – Form fit function/proprietary design items, including sub-tier hardware indenture levels.			
• The design approach minimizes impact of DMSMS by addressing: – Open system architecture. – Order of precedence for parts selection. o Use of qualified manufacturers lists parts, particularly for applications requiring extended temperature ranges). o Selection of parts relatively new in their life cycle. o Minimizes use of custom parts. – The requirement for a preferred parts list and parts control prior to detailed design to minimize obsolescence issues. – Identification of shelf and operating life requirements. – Identification of technology life expectancies.			
• DMSMS Business Case Analysis (BCA) is performed as part of trade-studies to determine return on investment on mitigation actions.			
• Obsolescence life cycle (versus contract period) mitigation strategy is defined (e.g., life of type buy, reclamation, captive line, emulation, bridge buy, redesign/tech refresh, aftermarket, existing stock, substitute/ alternate part, chip/die availability and storage).			
• DMSMS life cycle cost and cost avoidance has been estimated.			
• Current and out-year budget established/planned based on DMSMS forecast, tracking and mitigation efforts.			
• *Funding shortfalls (appropriation, amount, timing) and impact are identified, prioritized*			

Design Interface

Evaluation Criteria	Milestone B	Milestone C	Milestone FRP
and documented.	X	U	U
• Contractual data requirements define, as appropriate:	↓	↓	↓
– Contractor vs. Government life cycle DMSMS tasks and responsibilities.	↓	↓	↓
– DMSMS incentives/awards.	↓	↓	↓
– Decision on ownership of product/technical data package rights and COTS licensing agreements.	↓	↓	↓
– PBL/TSPR strategy for legacy system DMSMS.	↓	↓	↓
– DMSMS planning and mitigation requirements.	↓	↓	↓
– System architecture/design to minimize obsolescence costs.	↓	↓	↓
– DMSMS production/repair/procurement capability including hardware/software, support and test equipment, tooling/fixtures and chip/die availability and storage.	↓	↓	↓
– Supply chain monitoring/management including contractor/vendor notification of pending parts obsolescence and part/firmware changes.	↓	↓	↓
– Configuration management to the appropriate obsolescence mitigation levels.	↓	↓	↓
– DMSMS database establishment and maintenance through an Integrated Digital Data Environment (IDDE) concept of operations that supports the total life cycle management of the product.	↓	↓	↓
– Technical data package that supports the DMSMS mitigation strategy:	↓	↓	↓
o Specifications, technical manuals, engineering drawings/ product data models that provide appropriate level of detail for reprocurement, maintenance and manufacture of the product.	↓	↓	↓
o Special instructions for items such as unique manufacturing, quality and test processes, preservation and packaging.	↓	↓	↓
o Very High Speed Integrated Circuit Hardware Description Language (VHDL) documentation of digital electronic circuitry.	↓	↓	↓
o The version, release, change status and other identification details of each deliverable item.	↓	↓	↓
– Program, design and production readiness reviews of contractor DMSMS management effectiveness.	↓	↓	↓
– Provisioning screening required for maximum use of existing supply items.	↓	↓	↓
• DMSMS considerations are incorporated into the integrated logistics support plan and post production support plan.	↓	↓	↓
• Items that are single source and those for which the Government cannot obtain data rights and the associated corrective action plans are identified.	↓	↓	↓
• Strategies to resolve potential DMSMS problems (e.g., production or repair capabilities, software upgrades/maintenance, support equipment) are established.	↓	↓	↓
• A program manager/naval supply systems command reprocurement engineering support agreement is in place.	↓	↓	↓
• Monitoring of usage and anticipated demand vs. items available for DMSMS mitigation planning throughout the items life cycle.	↓	↓	↓