



NAVAL UNDERSEA WARFARE CENTER DIVISION KEYPORT



Obsolescence Management & Obsolescence Management Information System (OMIS™)

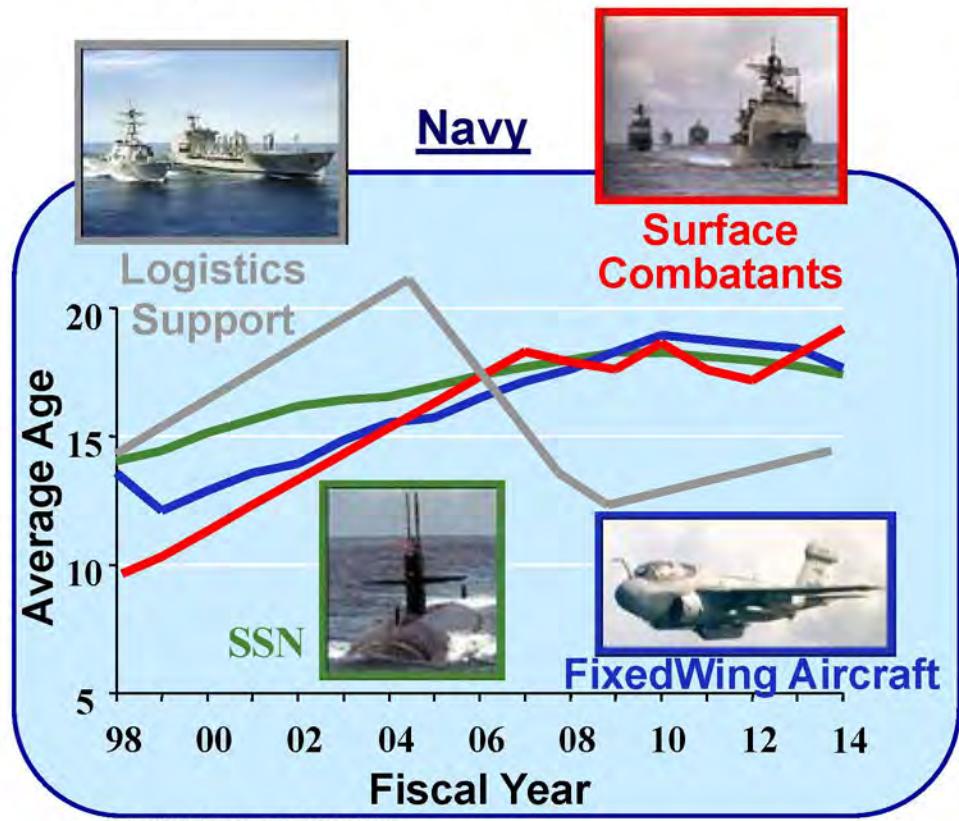
CAPT STEPHEN IWANOWICZ, USN
COMMANDER

MR. JAMES VANANTWERP, SES
DIVISION TECHNICAL DIRECTOR

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Obsolescence Impact

Years of under investment in new acquisition / modernization...



*...Has resulted
in aging Force Structure*

Estimated Cost Avoidance for Navy Proactive Electronics Obsolescence Management is \$4.9B over the life of current systems (DoN Study, 2004)

Less than 10% of Repairable & Consumable Electronics are tracked at the level DASN-L wants (Bill of Material Tracking)

Management of Mechanical component obsolescence is even worse!

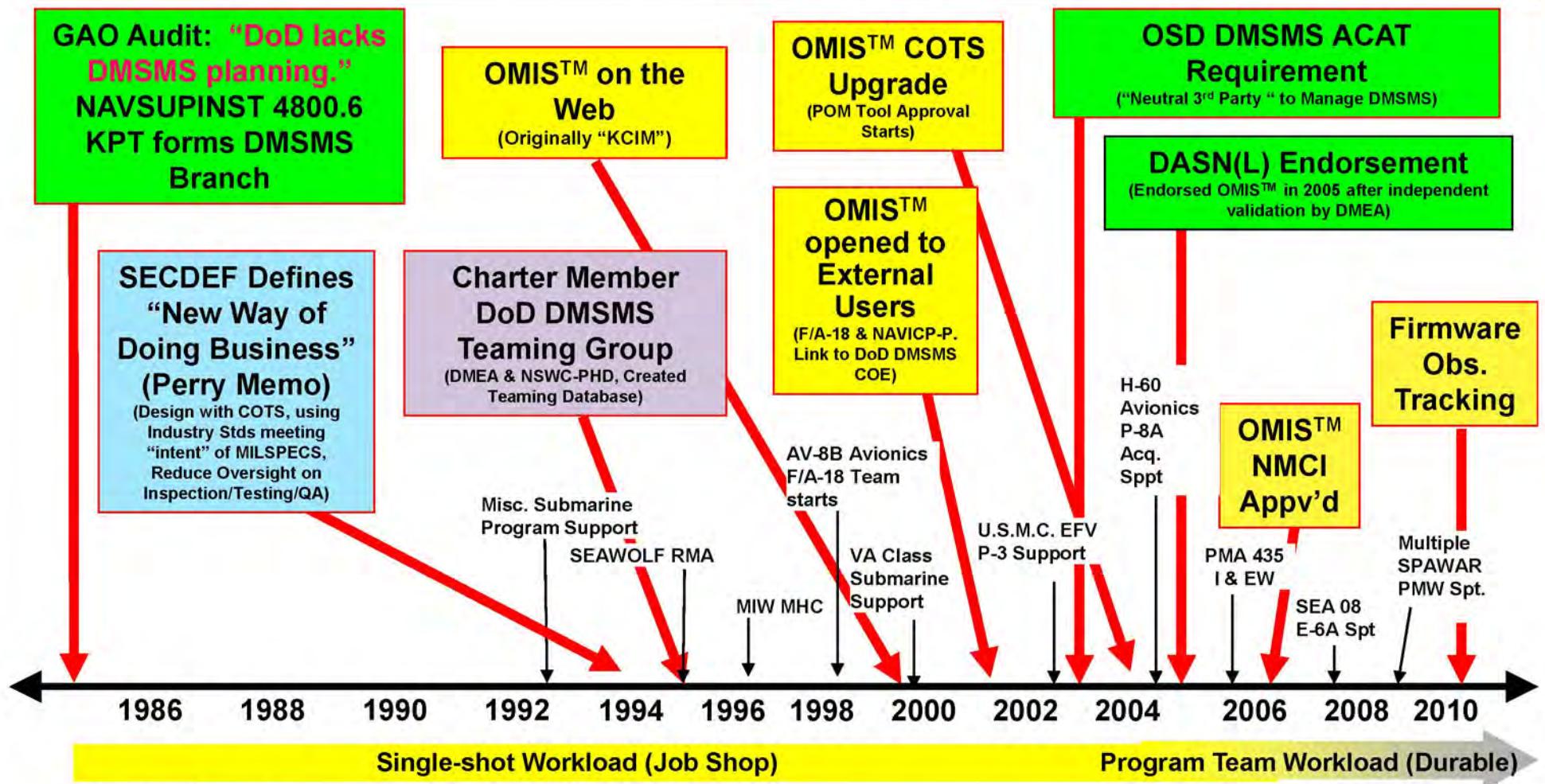


US NAVY CURRENT OBSOLESCENCE MANAGEMENT ENVIRONMENT

- All ACAT Programs must have a DMSMS Management plan since August 2005 to proceed past Milestone "C"
- DMSMS should be managed proactively by a DMSMS Mgmt Team (DMT) via a DMSMS Management Plan
- Government must have Obsolescence Mgmt lifecycle OVERSIGHT in spite of PBL and other contract vehicles
- Government and Primes must manage their subs and supplier pipelines and sources
- Technology road mapping is part of the process
- Systems should be monitored at the lowest component level possible - unless BCA proves otherwise.
- With robust and proactive OM resolution processes in place, Re-Design due to obsolescence should be rare and manageable.
- Obsolescence Case Metrics must be kept



Path To Obsolescence Mgmt (How Did We Get Here?)



DMSMS Policy Environment

- 2003: ASN-RD&A issues Product Support Boundaries Guidance
- 2004: DASN(L) holds DMSMS EXCOM. ASN-RD&A issues DMSMS draft update to ILA process
- 2005 ASN-RD&A provides DMSMS Guidance, Calls for DMSMS plans. DASN(L) #DID to obtain BOM's. OSD Identifies DMSMS as separate DoD ILA Evaluation Criteria. Dod DMSMS Guidebook issued
- 2006: DASN-L issues DMSMS Strategic Plan. ASN-RD&A issues DMSMS Guidance for contracts

Obsolescence Management Program

OBJECTIVE: Develop an Obsolescence Management (OM) Program

- Provide guidelines following proven DMSMS processes to Improve Availability and Reduce the Cost of Obsolescence.
- Strict adherence to existing DoN Policy & Guidance
- Disciplined approach to Define, Measure, Analyze, Resolve/Improve, and Monitor/Control potential and ongoing obsolescence



Step #1 – Stand-Up a DMSMS Management Team (DMT) / Define OM Plan / R&Rs

Assign Government and Contractor members, including:

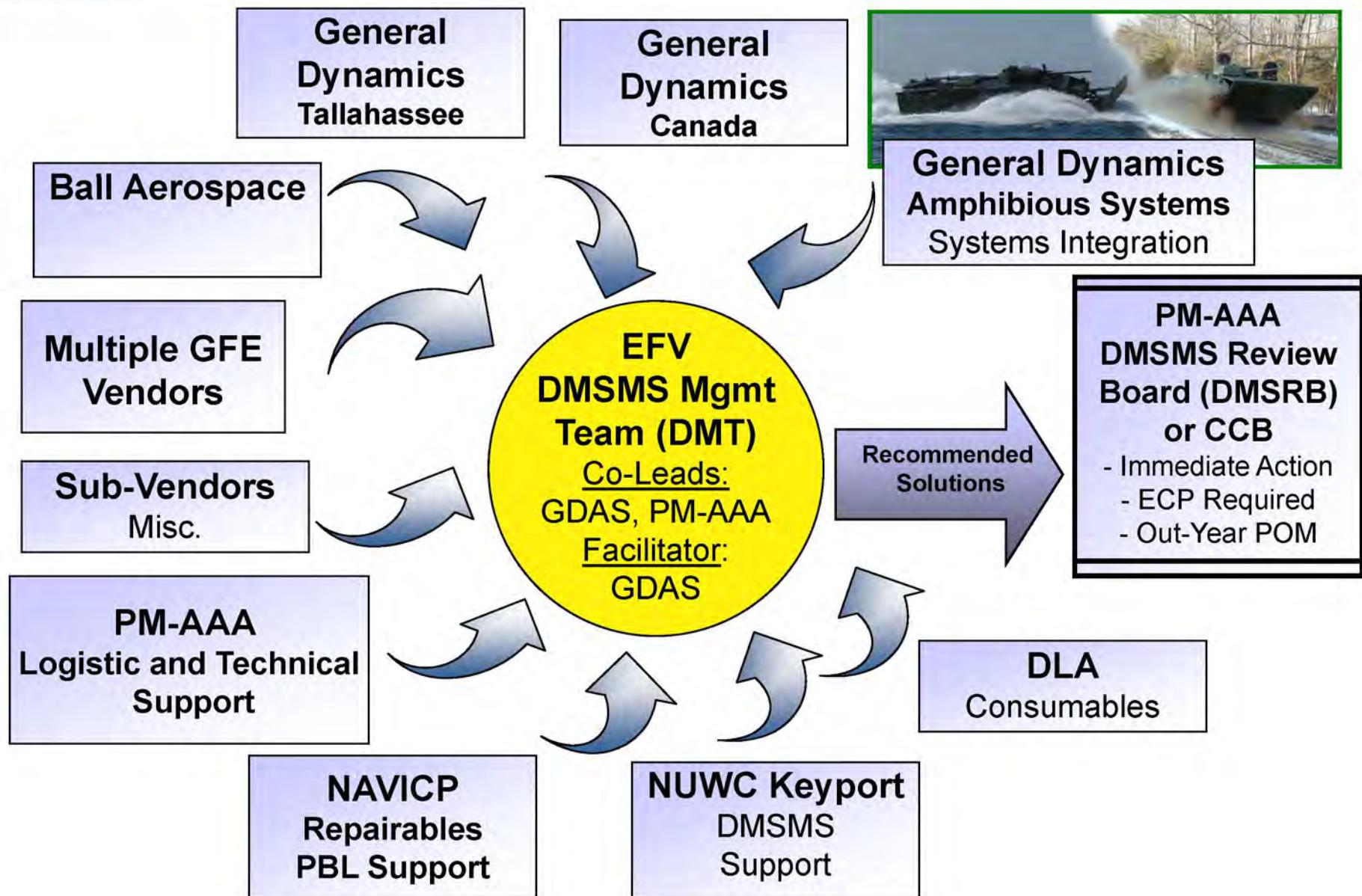
- ✓ **Government** (DoD Program Offices, Supply Branch, Appropriate Program IPT Leads, DLA)
- ✓ **Commercial** (OEM, Key Sub-Vendors)
- ✓ **Others** as required

Draft Obsolescence Mgmt Plan / Guidelines

Assign DMT Roles & Responsibilities (R & R's)



Typical DMT Structure – U.S.M.C. EFV Program





Define/Prioritize, Collect Tech Data

STEP #2 – Profile/Prioritize System Components and Commercial off the Shelf (COTS)

- Profile all production and fielded systems / prioritize systems for proactive OM support
- Prioritize COTS, HM&E assets / vendor survey tracking (Load All – Track only high priority / unique assets)
- Choose overall resolution priority (in production vs. fielded)

STEP #3 – Collect/Collate Platform/System Life Cycle and Technical Data

- Define tech data sharing plan (possibly in production or PBL Contract)
- System's quantities, configuration updates, Tech Refresh plans
- Define COTS/HM&E, Non-COTS/MilSpec – Perform COTS / HM&E vendor surveys

STEP #4 – Define Technology Roadmap / Trends for Production / Modernization

- Investigate optimum design refresh plan
- Consider periodic integration of new technology
- Capitalize on performance-improved components
- Optimize design techniques to mitigate assembly/component obsolescence
- Define associated industry & technology design and manufacturing trends

STEP #5 – Define Current Obsolescence / Outyear Sustainability

- Component procurability (SOURCE) data (**IHS BOM Manager, QStar, TPP, AVCOM**)
- Unit / CCA /Component supportability (STOCK) data (**NAVICP, DLA, SOM, OEM SOH**)
- Component failure (RELIABILITY) data (**Depot Data, RELEX**)
- Out year supportability summary bar charts on impacted assemblies
- Lists of obsolete components, prioritized by system Impact

STEP #6 – Determine Resolution Options

- Life-of-Type (LOT) buy
- Product warranty/extended repair contract
- Alternate / Substitution (BOM Mgr, PartMiner)
- Aftermarket (Landsdale, REI, ASI)
- COTS Design Longevity (NUWC Keyport)
- Emulation (DLA's GEM Program, DMEA)
- Reverse engineering / Re-Design (NUWC KPT, DMEA)

STEP #7 – Conduct “Best Value” Analysis

- Resolution options defined for COTS/Non-COTS by ‘What If’ Scenarios (**OMIS™**)
- Comparison of obsolescence resolution costs vs. added years of support (“Bang for the Buck”)
- Schedule / Performance impacts are analyzed
- Business Case Analysis (BCA) ensures out year sustainment projected thru system EOL date (**NOT just End of Support contract date if possible**)

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STEP #8 –DMT Makes Resolution Option and POM Recommendations

- Calculation of out year CCA/Unit/System POM Budget required to End Of Life (EOL)
- Costs of proposed resolutions automatically roll-up to system and platform levels
- Resulting multi-level POM defines itemized costs/out year to manage obsolescence (“When to Pay and How Much”)
- CCA/Unit/System obsolescence resolution options are recommended to PM

STEP #9 – Follow-On Proactive Management of System Obsolescence

- Coordination of Qualification / Test of OM resolution solutions
- Open obsolescence resolution cases as required
- Weekly monitor procurability (source) data
- Quarterly monitor supportability (stock) data
- Continuously Track/Store/Report Cases associated alerts
- Monthly Status and Bi-Annual Supportability Reports defining current systems sustainment status
- Maintain Metrics as required for DoN/DoD reporting



Program Office Support/Recommendation Response

PROGRAM OFFICE SUPPORT IS CRUCIAL TO SUCCESS...

- Must have strong support at the Program Manager (PM) level.
- PM provides approval of sensitive program-related data transfer
- Teaming with BOTH Program Logistics and Engineering Teams is key
- PM provides direction to stakeholders failing to provide required support

OM RESOLUTION RECOMMENDATION RESPONSE

- Resolution recommendations must be acted upon in a timely manner
- Time-Sensitive LOT Buys - low cost now; if ignored, will result in high-cost redesigns in the future
- Timely Procurements – If NOT completed from Authorized Distributors, follow-on buys may incur counterfeit broker procurements, wasting time, money, and bringing NCIS into the picture.

TECHNICAL DOCUMENTATION REQUIREMENTS

- OM is performed at the LRU and piece part level. Complete indentured Bills of Materials (BOMs) are essential to successfully manage a system's obsolescence
- Require exact Vendor's / Mfgr's Part Number, CAGE, and Nomenclature to research Source, Stock, Reliability data – often only "Config P/N" or SCD #...
- This may include technical information of a proprietary nature - Proprietary Protection is in place and NOT a reason for Non-Compliance!

CONTRACTS / GOV'T OVERSIGHT

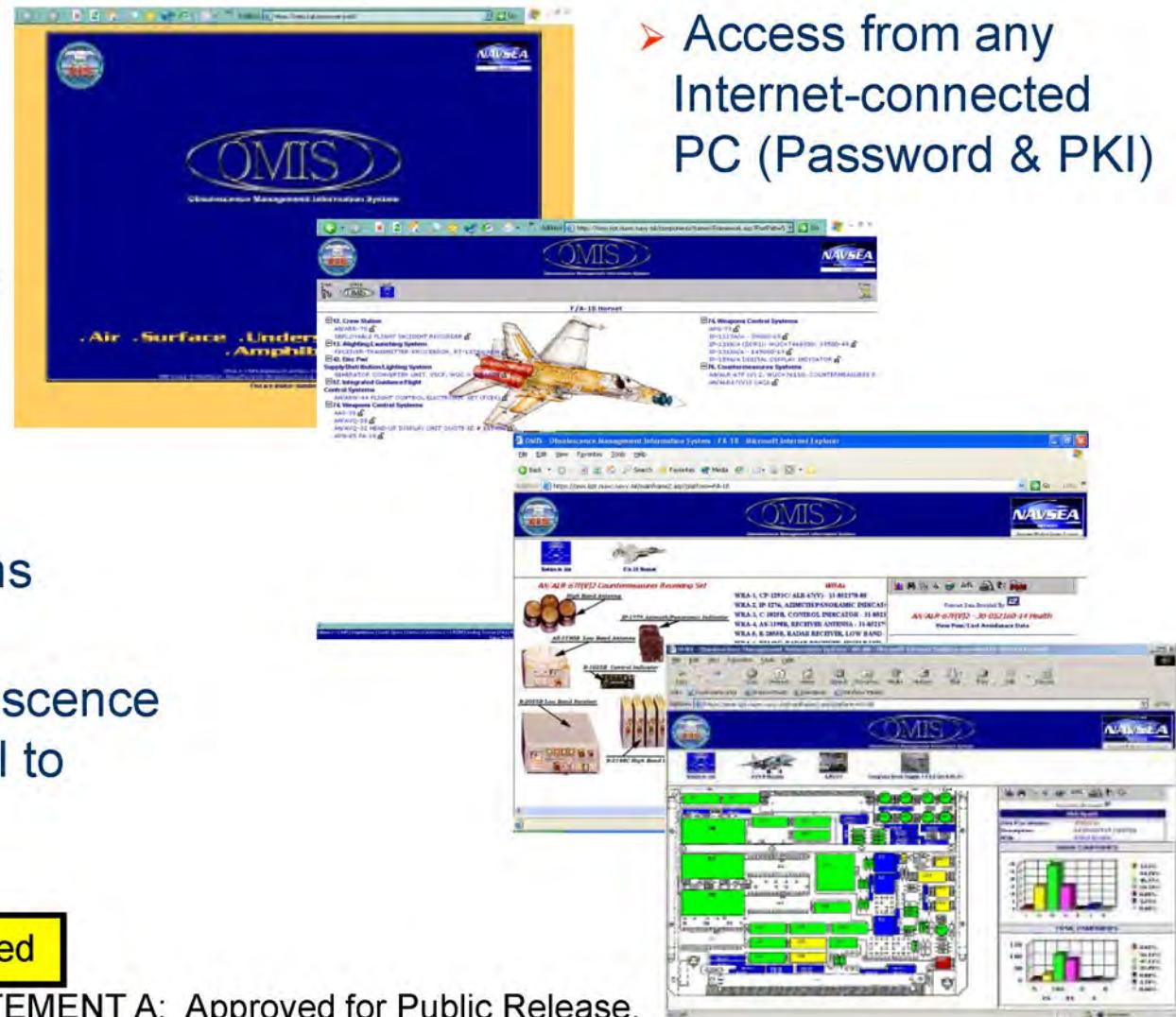
- While DMSMS mgmt. actions may be delegated to OEMs System Integrators, **Ultimate Responsibility for Managing DMSMS Lies with the Government**
- OEMs Obligated to provide Tech Docs to support Gov't oversight - **ONLY if it is written into their Current Contract**
- Existing OEM and Sub-Vendor Contracts need to be revised with CDRLs detailing Data Sharing

OMIS™ Overview

OMIS™ - Web-based Proactive Obsolescence Management & Mitigation System.

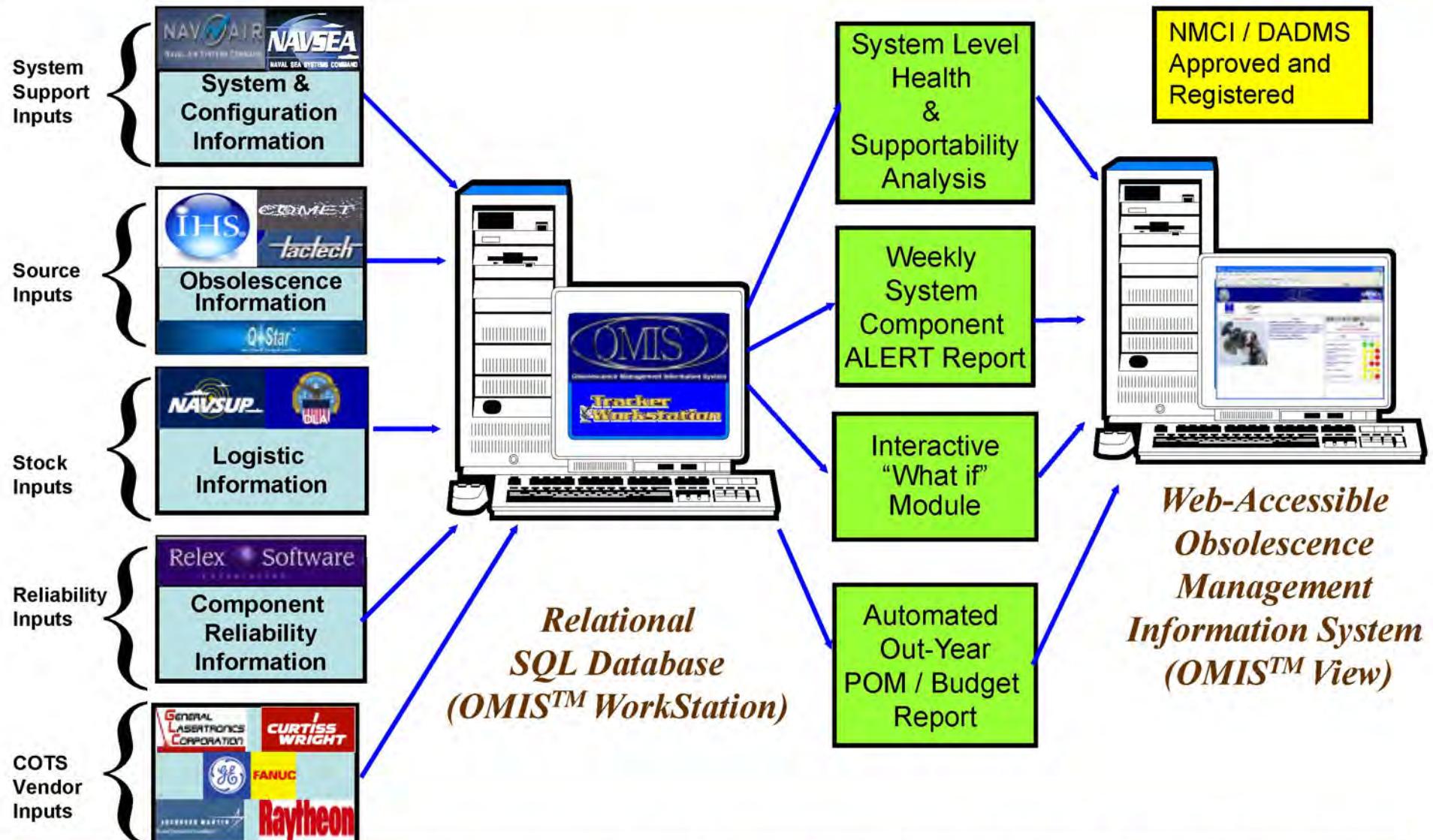
- Real-time visibility into a Program's obsolescence posture.
- Kept current with Weekly Source and Quarterly Stock Availability
- Proactive Platform obsolescence tracking (budget impact projections and mitigation).
- Drill down to view obsolescence issues from Platform level to Component level.

SSAA In-Place / DITSCAP Certified



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OMIS™ System Inputs / Outputs



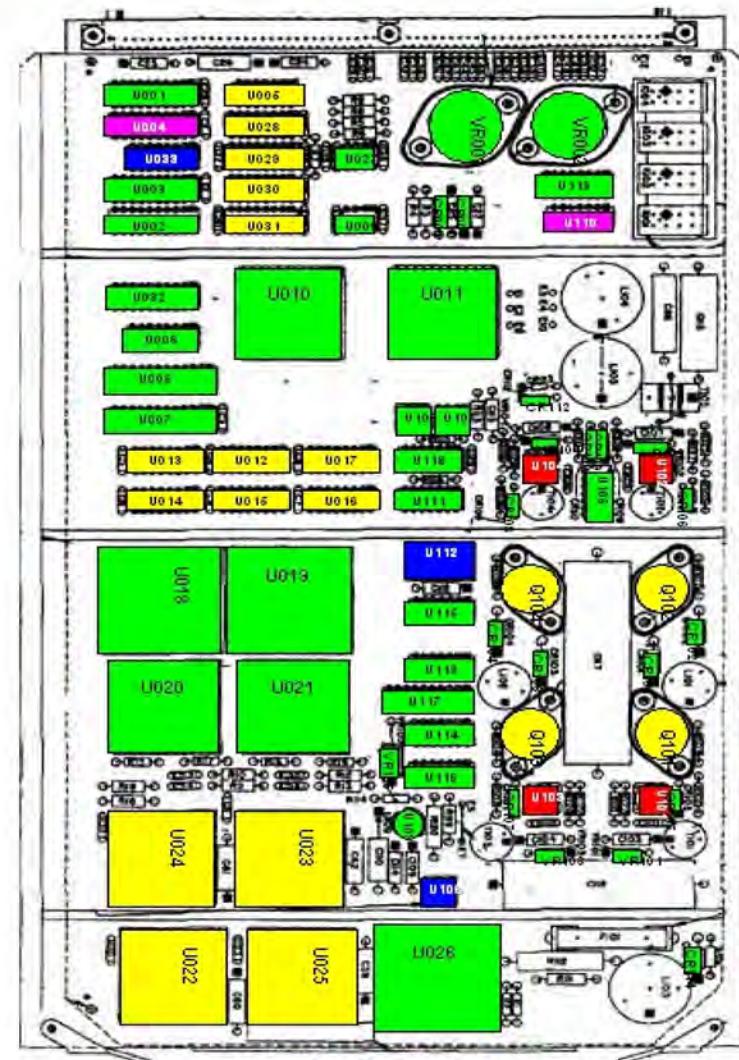
OMIS™ Designed to Solve Obsolescence Issues As they Arise / Share Solutions Across All Platforms

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Graphical Display

Obsolescence Management Information System (OMIS™) WEB output supports Component View Drawings of each CCA analyzed in a system. Key Components are color-coded to indicate source availability.

- Green** – Components with Original Equipment Mfr. (OEM) source available (still in production)
 - Orange** – Components still in production; However, End Of Life (EOL) Notice in effect. (ACTION REQUIRED)
 - Purple** – Original components available from Aftermarket Manufacturing source.
 - Yellow** – Original component not currently in production. Alternate component available / in Production (needs qualification).
 - Blue** – Non-Active components (Resistors, Capacitors, etc)
 - Red** – Original component not in production with no Alternate source available.



Alternate Resolution Example

Timing Chip 555



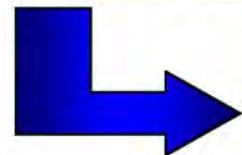
MILSPEC Temp: +125°C to -50°C

M38510/10901BPX Available from: TI (TLC555MJGB)
SIG (555/BPX)

- Only Authorized parts on the Source Control Drawing (SCD)

MILSPEC Temp: +125°C to -50°C

5962-8950301PX Available from: NSC (LM555J/883)
(Different Cert Process – Still MILSPEC) TI (TLC555MJGB)



Source Control Drawing



Addition Testing Recommended

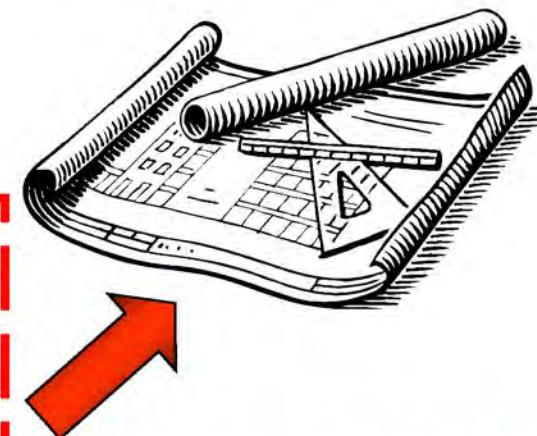
Becomes a POTENTIAL
ALTERNATE when
Authorized parts
become obsolete

Substitute Resolution Example

Timing Chip 555



Source Control Drawing



MILSPEC Quality: Temp: +125°C to -50°C

M38510/10901BPX Available from: TI (TLC555MJGB)
SIG (555/BPX)

• Only Authorized parts on the
Source Control Drawing (SCD)

Commercial Quality: Temp: +75°C to -0°C

LM555 Available from: NSC

SE555 Available from: TI

(Different Quality Level – NOT MILSPEC)

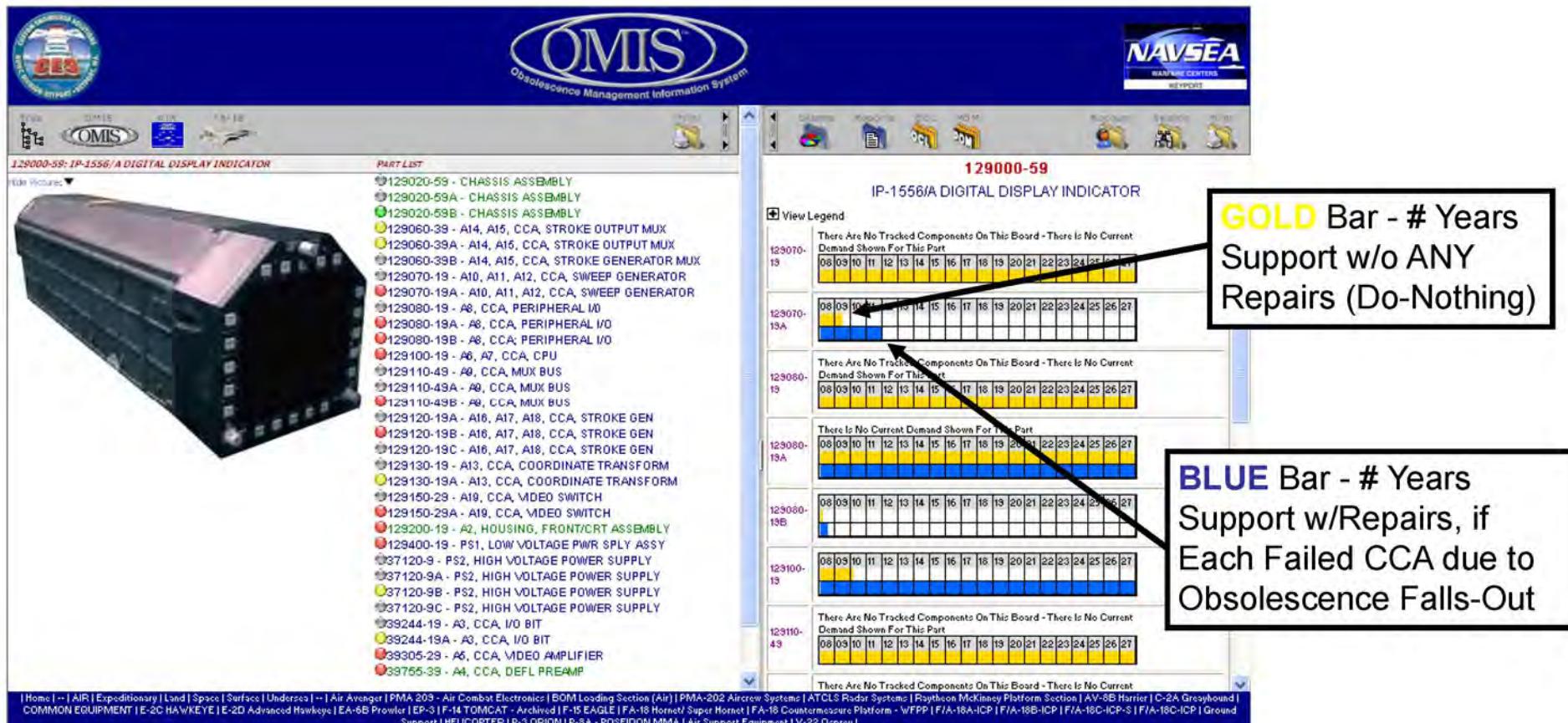
Addition Testing
Required

Becomes a POTENTIAL
SUBSTITUTE when
Authorized parts
become obsolete



OMIS™ Legacy System View

Legacy/MIL-SPEC Supportability Bar Charts



System, Stock, Source, & Reliability Data Used to Calculate Asset Procurability and Supportability

Non-COTS Interactive POM Budget Planning

Supportability
Information
Interactive
Results

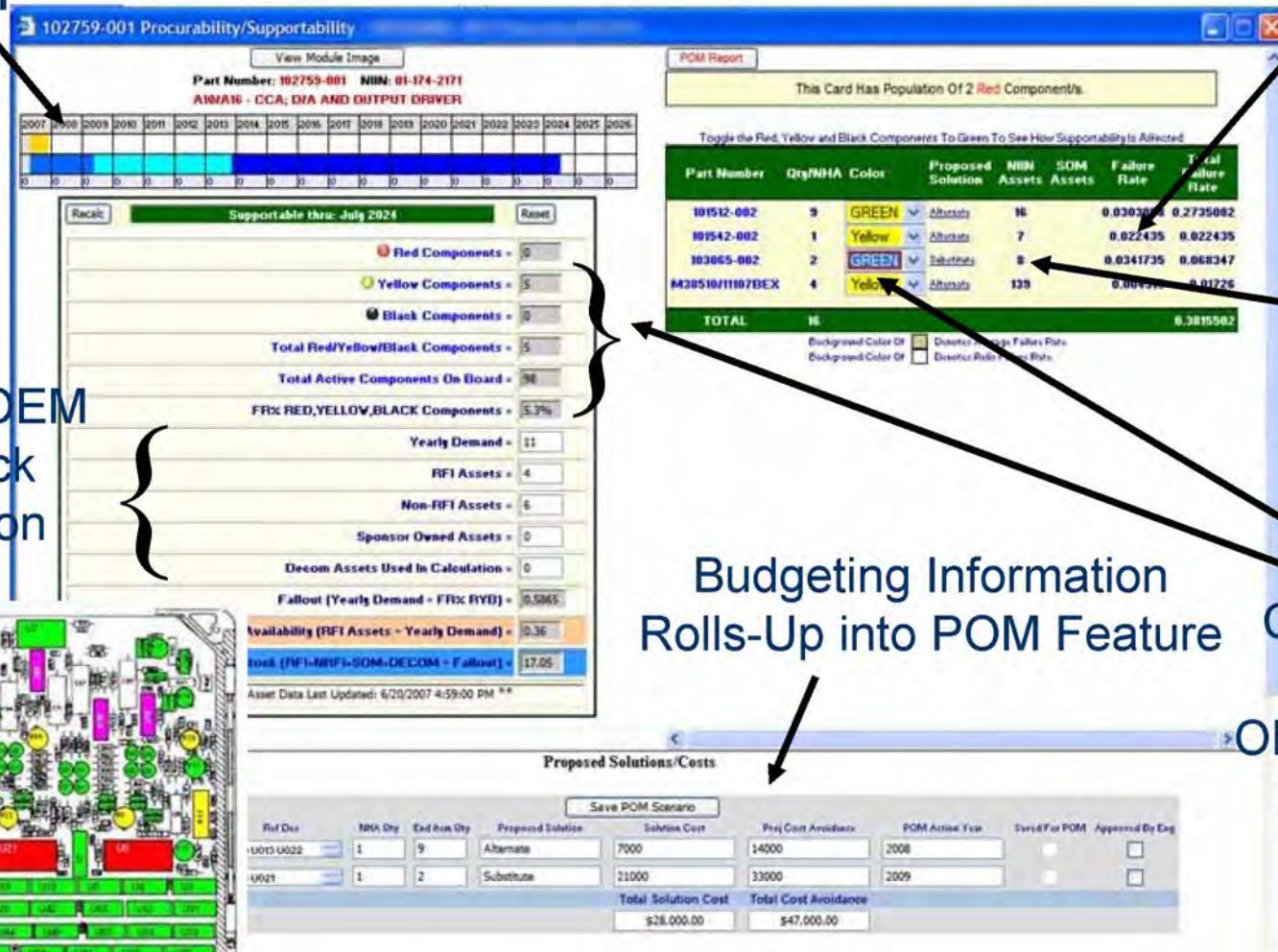
“What If” Interactive Module

NAVICP / OEM
CCA Stock
Information



CCA / NHA Component Source View

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Budgeting Information
Rolls-Up into POM Feature

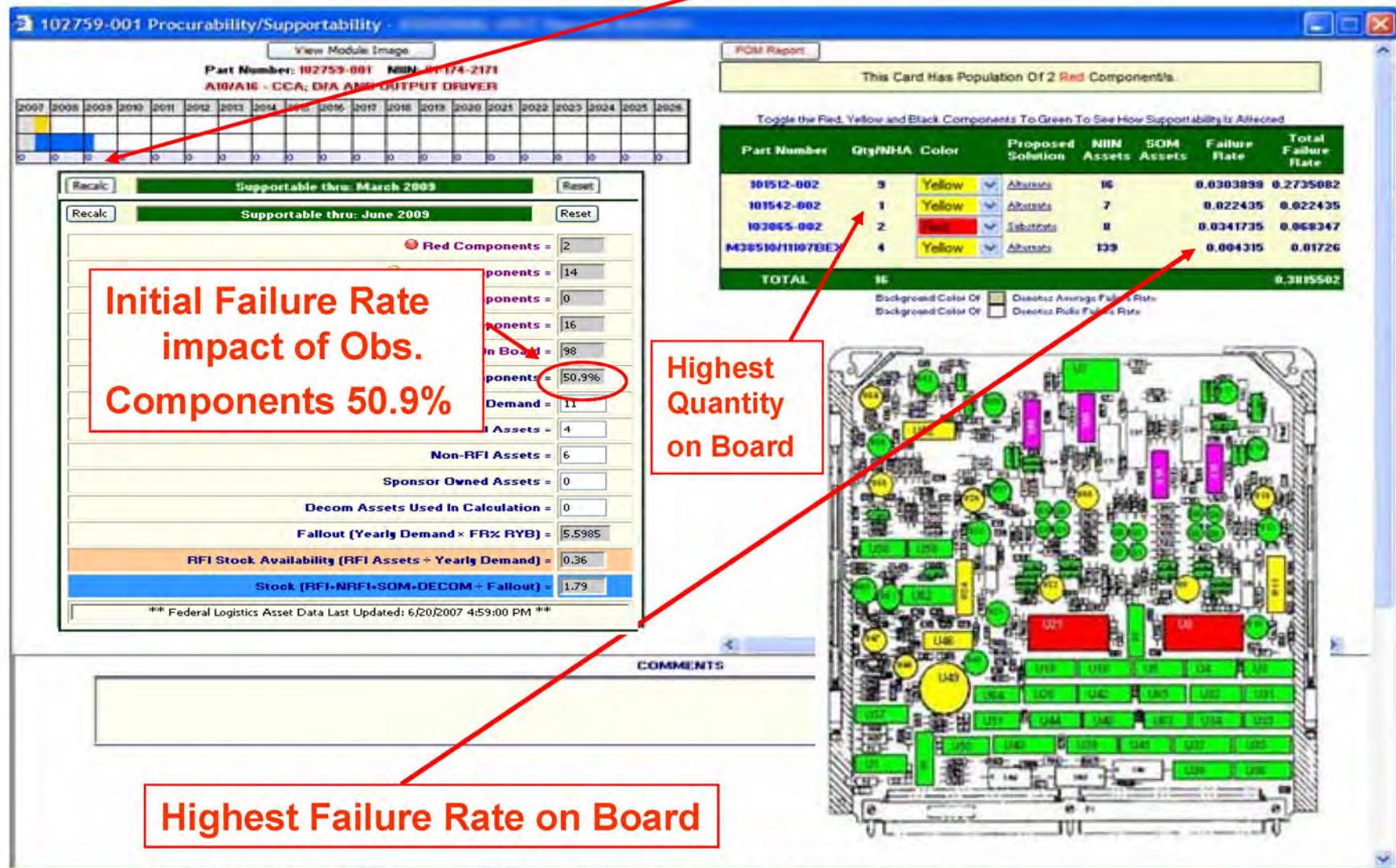
RELEX®
Reliability
Information

DLA and
SOM
Piece Part
Stock
Information

Component
Source
Obsolescence
Information

Typical WHAT-IF Analysis POM Scenario

Assembly only Supportable to 1st Quarter 2009



Legacy/ MILSPEC POM: Resolution 1

Resolving the RED part's obsolescence makes the assembly Supportable to 1st Quarter 2011

Manipulation from Red to Green

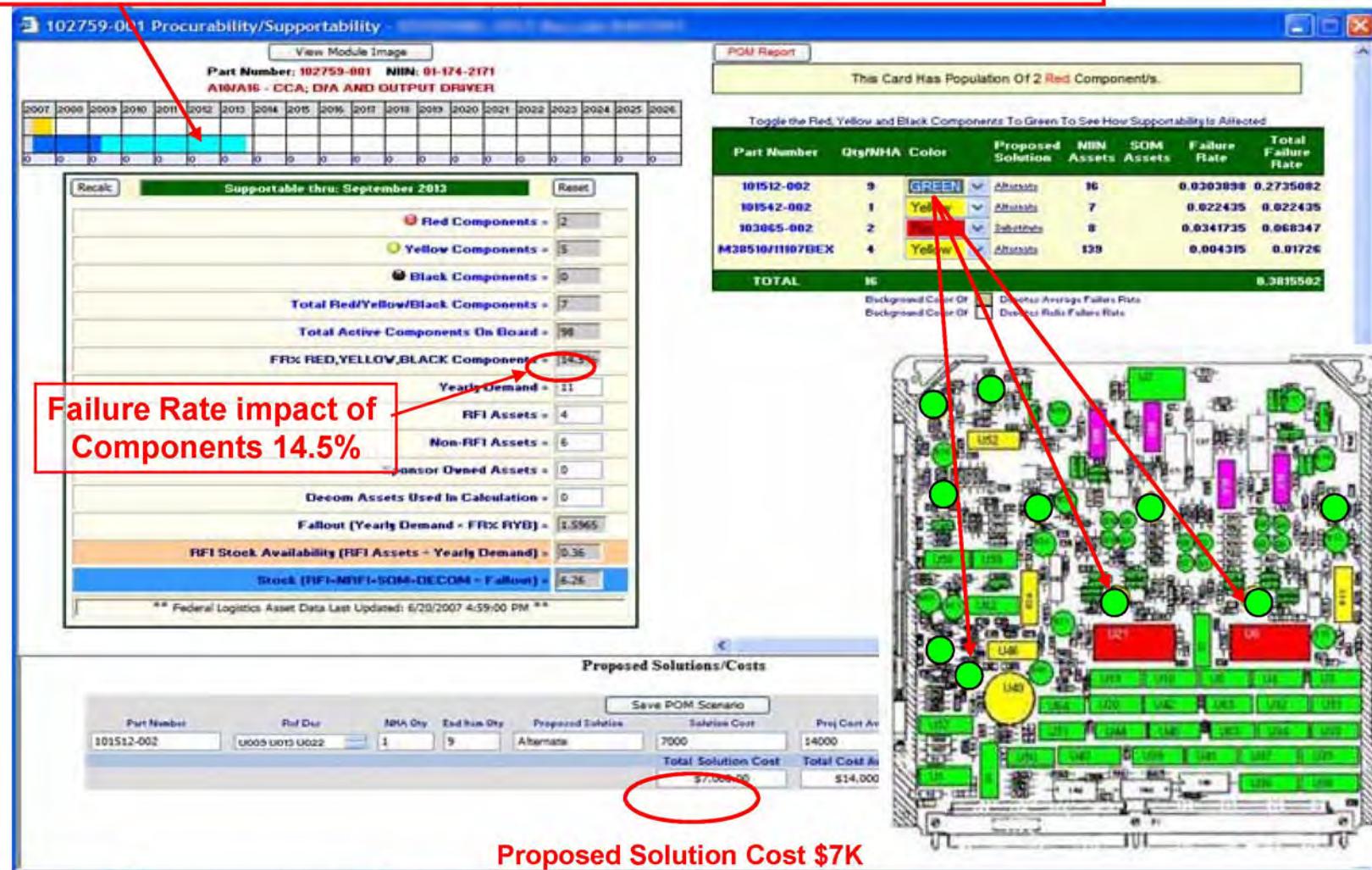
Failure Rate impact of Components 42.1%

Proposed Solution Cost \$21K

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Legacy/ MILSPEC POM: Resolution 2

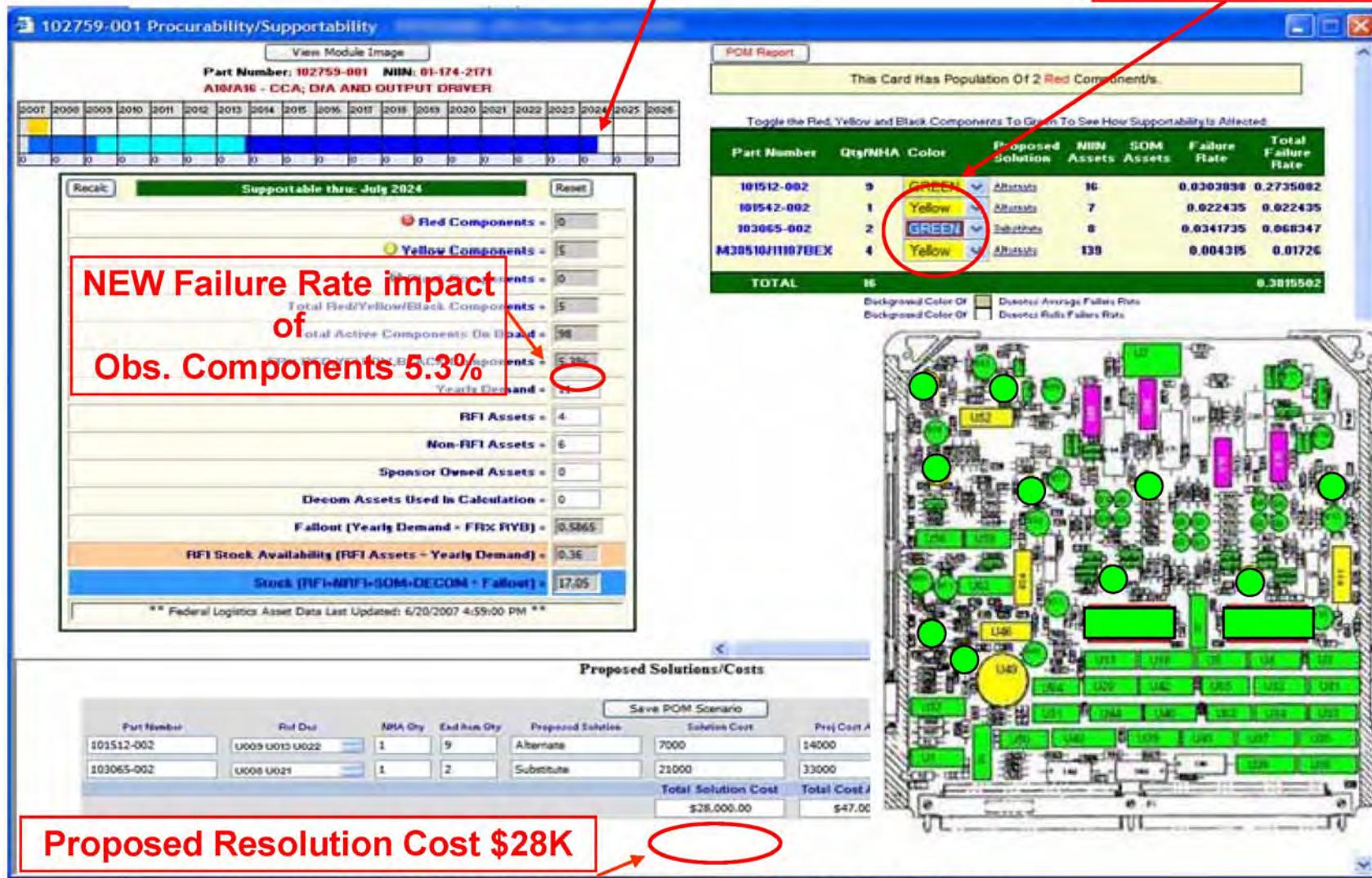
Resolving a **YELLOW** part's obsolescence makes the assembly Supportable to 4th Quarter 2013



Ideal POM Resolution Scenario

Resolving Two of the Four part's obsolescence makes the assembly Supportable to 3rd Quarter 2024

Change the Red AND Yellow to Green



Proposed Resolution Cost \$28K

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Standard Resolution Costs / Avoidances

Remove Solution	<input type="radio"/>	
Solution Not Required	<input type="radio"/>	\$0.00
Existing Stock	<input type="radio"/>	\$0.00
Reclamation	<input type="radio"/>	\$2,000.00
Alternate	<input checked="" type="radio"/>	\$7,000.00
Aftermarket	<input type="radio"/>	\$54,000.00
Substitute	<input type="radio"/>	\$21,000.00
Emulation	<input type="radio"/>	\$78,000.00
LOT Buy	<input type="radio"/>	\$0.00
Redesign-Minor	<input type="radio"/>	\$127,000.00
Redesign-Major	<input type="radio"/>	\$469,000.00

DoD Cost Avoidance metrics are based on the difference between the cost of the solution utilized and the next higher VIABLE cost resolution option.

**Standardized DoD Obsolescence
RESOLUTION COSTS**

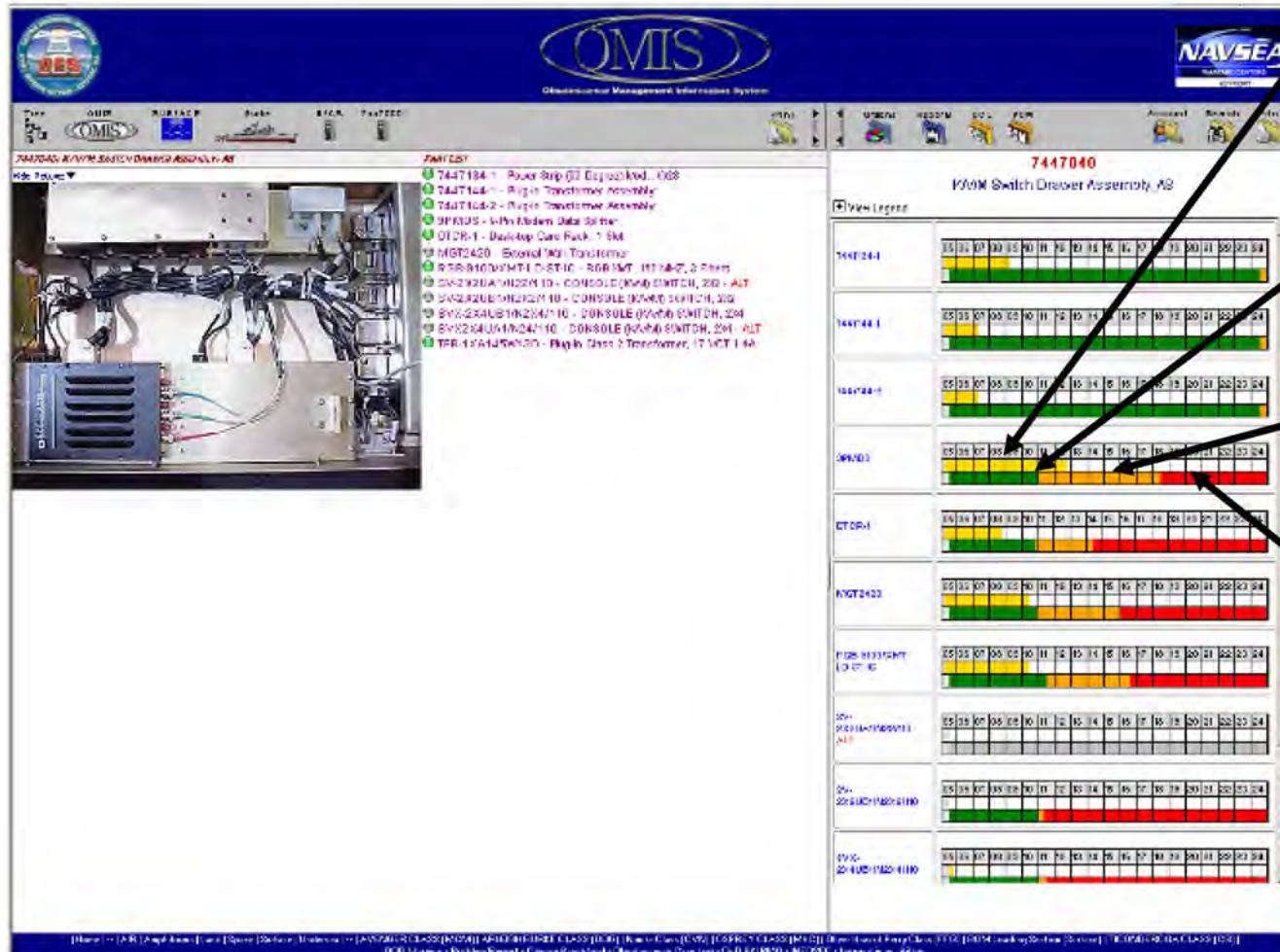
Default Resolution COST AVOIDANCES

Cost Avoidance Example:
Customer OM Solution is a Redesign for \$787K
Keyport OM Solution = Alternate Part (\$7K)
Cost Av. = \$780K

Solution	Solution Cost	Solution Cost Avoidance
1. Solution Not Required	\$0.00	\$2,000.00
2. Original component	\$0.00	\$2,000.00
2a. - Continue to Mfr	\$0.00	\$2,000.00
2b. - Life of Type Buy (Lot Buy)	\$0.00	\$2,000.00
2c. - Existing Stock	\$0.00	\$2,000.00
2d. - Broker Market	\$0.00	\$2,000.00
2e. - Reclamation	\$2,000.00	\$5,000.00
3. Alternate	\$7,000.00	\$14,000.00
4. Substitute	\$21,000.00	\$33,000.00
4a. Substitute due to ROHS	\$21,000.00	\$33,000.00
5. Aftermarket	\$54,000.00	\$24,000.00
6. Emulation	\$78,000.00	\$49,000.00
7. Reverse Engineering (Hybrids)	\$127,000.00	\$342,000.00
8. Redesign – minor (ASIC) (Footprint of the board stays the same)	\$127,000.00	\$342,000.00
9. Redesign - major (Footprint of the board changes)	\$469,000.00	
10. Need more research		

OMIS™ COTS System Level View

COTS Supportability Summary Bar Charts



GOLD Bar - # Years of Available RFI / SOM Assets (On-Shelf)

Green Bar – Period of procurability

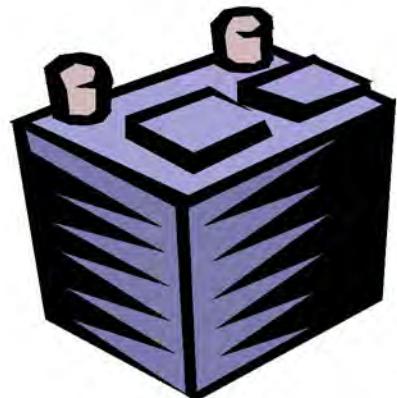
Orange Bar – Period of RFI/SOM Consumption

RED Bar – Period of no assets or support

More Bars Available for Warranty Period, OEM Repair, 3rd Party Repair, LOT Buy, SSB.

Obsolete COTS Resolution Example

Rev. A (2005)
Power Supply



Rev "A"
Power Supply
 ± 5 volts

Rev. B (2010)
Power Supply



Developed
due to
obsolescence

Rev "B"
Power Supply
 $(\pm 5 \text{ And } \pm 10 \text{ volts})$
smaller, lighter, less
expensive

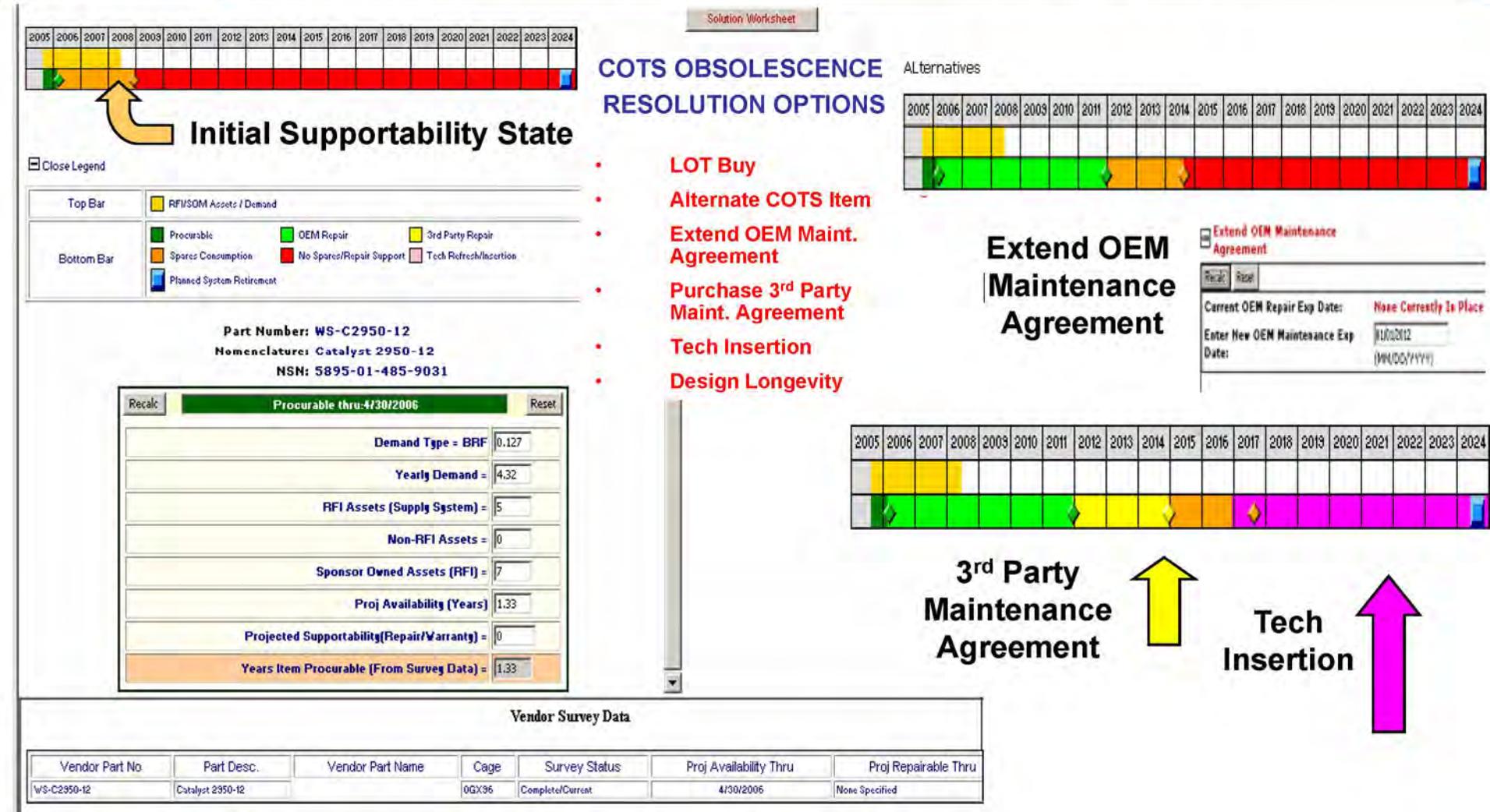
Transition to Rev "B"

- Low Risk in Open Architecture System Design
- High Risk in Closed Architecture / Legacy Systems

COTS RESOLUTION OPTIONS

- **LOT BUY**
Procure enough spares to last through System EOL
- **ALTERNATE COTS ASSY**
OEM has Alternate Assy, possibly RoHS Compliant
- **EXTEND OEM WARRANTY**
OEM agrees to repair and/or replace COTS Assy for extended period
- **THIRD PARTY REPAIR**
OEM agrees to license "3rd Party" repair for extended period
- **TECHNICAL REFRESH / INSERTION**
Insert Newer Technology (Choose Rev "B" now or at later date)
- **DESIGN LONGEVITY**
Either Obtain BOM from OEM, solve Obs. and provide obs. parts to OEM
Or Aid OEM to find 3rd Party to Mfgr COTS Assy for military – OEM gets royalties.

COTS Interactive POM Tool



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Why Prioritize?



- **COTS Management Costs \$**
- **Some items have less Risk and require less mitigation**
- **Strategy = LOAD all Assets, TRACK only High Priority Assets**

Prioritization Criteria

- **Mission Criticality**
- **Architecture (Open/Closed)**
- **Sole Manufacturer**
- **Modified COTS**
- **Unique Fit / Materials**
- **Single Point Failure**
- **Safety Concerns**
- **High Redesign Cost**

RECENT EXAMPLE:

OMIS™ Customer had 2000+ Piece Parts; After Prioritization, All 2000+ Parts LOADED into OMIS™, Only 135 Unique Parts required TRACKING.

Vendor Survey Process

Survey Team



Email Survey



Thank you for taking this survey! This will help the Navy to determine the status of this part.

Query for: System/Module: 16 Channel Relay Module (PACAGE: SP422)

NUWC Keyport, Div C418

Attn: Gene Harper Phone: (360) 315-7900

gene.harper@navsea.navy.mil

BASIC PART INFORMATION

Part Number: 16 Channel Relay Module

Tech POC Name: Gene Harper

Tech POC Email: gene.harper@navsea.navy.mil

Tech POC Phone: 617-262-6001

CRITICAL PART INFORMATION

Is the part still in Production? Yes

Planned End of Production Date (over-ride): 12/31/2010

End Procurement Date (over-ride): 12/31/2010

DETAILED PART INFORMATION

Production Start Date: Jan-1995

Most Current Revision: Rev A2

Planned Replacement: None

Procurement Case: 3424.08

Lead Time: 4 weeks ARO

Available Stock: In Stock (Locality)

Potential Advances PPA: None

Recovered/Replaced: None

DDU Programs will use Part: Unknown

REPAIR/WARRANTY INFORMATION

Repair Cost: \$400 plus parts

Avg Time Between Failures: 27,400 hours per MIL-HDBK-217F

Warranty: 1 year

End Manufacturer Repair Date: None Specified

Extended Warranty: None

End Extended/3rd Party Repair Date: None Specified

Comments:



Phone Survey

The screenshot shows a Windows application window titled "Vendor Survey Form". The form contains several sections with input fields:

- Product Information:** Manufacturer: VMEC, Model: 16 Channel Relay Module, Description: 16 Channel Relay Module.
- Customer Information:** Name: VMEC, Inc., Address: 123 Main St, City: Seattle, State: WA, Zip: 98101.
- Manufacturing Details:** Production Start Date: Jan-1995, Most Current Revision: Rev A2, Planned Replacement: None, Procurement Case: 3424.08.
- Repair/Warranty:** Repair Cost: \$400 plus parts, Avg Time Between Failures: 27,400 hours per MIL-HDBK-217F, Warranty: 1 year, End Manufacturer Repair Date: None Specified, Extended Warranty: None, End Extended/3rd Party Repair Date: None Specified.
- Comments:** A large text area for comments is present at the bottom.

Email Survey

OMIS™ Data Entry



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Quick Look Report

Executive Summary:
Systems status at a glance

Quick Look Report:
What we have done,
What's left,
What's been found so far

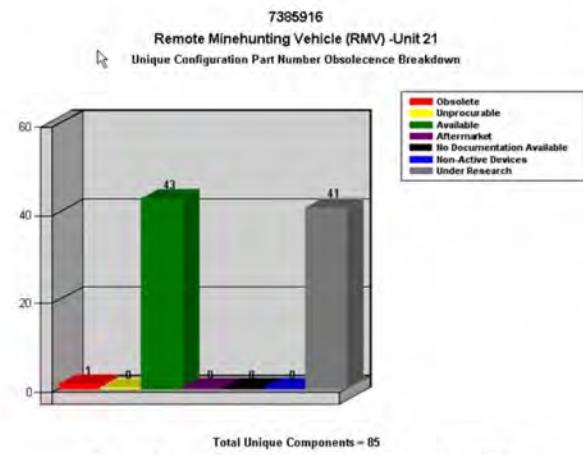
Quick Look Results:
Details system status

Executive Summary

This Obsolescence Quick Look is a snapshot in time, and focuses on the COTS items, and the active semiconductor components on the RMV. The RMV is the major subsystem on the AN-WLD-1(V)1 Remote Minehunting System (RMS). The data is intended to give the user a look and feel for the potential Obsolescence Management (OM) within the RMV. The data was exported from OMIS and encompasses 88 COTS units (See Appendix 1) and semiconductor components (See Appendix 2) for the RMV. As of today, there are 52 COTS Surveys still in addition to 1 obsolete component, without a potential replacement. There are 41 active components with insur or unknown vendors requiring further definition.

Additionally, since the end of FY06 there have been 9 Obsolescence cases generated against the RMV, 4 have been resolved with 5 remaining in-work (See Appendix 3).

The Quick Look shows a significant quantity of COTS Surveys remaining, as well as unknowns within RMV electronic components. Figure 1 displays current status on 88 active components loaded into OMIS™.



Quick Look Results

The RMV contains of 88 active electronic components. The results fall into the following categories:

- COTS Surveys:** A total of 36 are complete, 52 remaining in-work.
- In-production (Green):** A total of 43 components are active electronic devices, and have manufacturing sources for the original part and are still in production.
- In-production Passive Component (Blue):** Passive components are not being tracked at this time.
- Obsolete with Alternates (Yellow):** There are 0 components that have become obsolete but have a potential alternative solution available from an active manufacturing resource. Each potential alternate solution that is found is a Form-Fit-Function (FFF) replacement, and will require the In-Service-Engineer (ISE) to test and validate each potential solution for final acceptance and approval.
- Obsolete with no Alternates Available (Red):** Current analysis has shown that only 1 component has become obsolete without any FFF replacement available.
- Aftermarket (Purple):** There are 0 components that have an aftermarket manufacturing resource.
- Unknown Status (Black/Grey):** A total of 41 components have no vendors currently in production or have insufficient documentation to cross reference to a part numbers that are in production.
- Obsolescence Cases:** 4 resolved, 5 remaining in-work

Appendices:
Details how the project is progressing

APPENDIX 1: Current COTS Survey Status

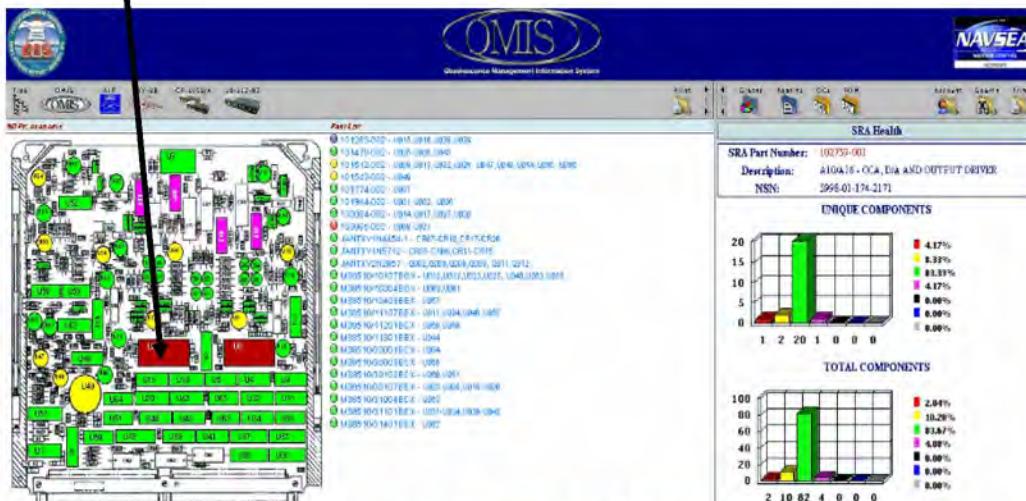
Part Number	Part Description	Survey Status
1051054G	MODULE, ADIO, AN//RC-39B LOS RADIO	Complete/Current
10513-0100-02	MULTIBAND/ MULTIFUNCTION RADIO, AN/PRC-117F (C)	Complete/Current
10564-1810-01	BAND PASS RF FILTER	Complete/Current
10564-1850-01	BAND PASS FILTER, PART of AN/PRC-117F (C)	Complete/Current
12005-1000-01	POWER ADAPTER UNIT	Complete/Current
12005-1000-03	ADAPTER, VEHICULAR ADAPTER UNIT	Overdue



Source/Stock Data Search

**Double-Clicking the Obsolete Microcircuit
P/N #103065-002 On Interactive CCA View Here ...**

Opens the P/N #103065-002 Part Data Screen



Or Entering it into the SEARCH TOOL
Here... /

OMIS™ - Obsolescence Management Information System - Part Look up - Microsoft...

OMIS™ APPLICATION SEARCH UTILITY

Search Criteria

Select Input type:

Configuration Part Number Mfr Part Number Generic Part Number

NIIN(XX-XXX-XXXX)

Input Part Number Value:

Match Value Exactly Match Where Value

Contained in String

Result Set

RESULTS FOR PART NUMBER: 103065-002		TOTAL QTY=4
AV-8B (1)	CP-1450/A (1)	Path Qty =
10-112-03 (1)	102759-001 (2)	→ Total Qty =
103065-002 (2)		

OMIS™ Manages over 2 Million Parts, Tracking Assemblies across 1200 Systems on over 50 Platforms.

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Obsolescence Case Log

Viewable Platform Data

The screenshot illustrates the Obsolescence Case Log application interface. It features two main windows:

- Left Window (Platform Data):** A grid view showing various platforms and their status. The platform **FA-18** is highlighted, indicating it is the current focus.
- Right Window (Case Details):** A detailed view of Case **FA-18-FY04-1**. Key fields include:
 - Case Number:** FA-18-FY04-1
 - Part Number:** XM20C64MHR-55
 - Reason Initiated:** Discussions held at the TFLIR summit - March 03 between Kevin Clarke and Rob Taylor about how to resolve alternate issues and obsolete issues in the TFLIR. QL# 04-0287
 - Recommended Resolution:** Existing Stock
 - Potential Resolution Cost:** \$0.00
 - Potential Cost Avoidance:** \$1,884.00
 - Resolution Technical Details:** This EEPROM has been discontinued without replacement. Twenty-eight (28) are presently available in the supply system. Recommend CST determine lifetime requirements. If requirements exceed above quantity NAVSEA Keppart can work with a semiconductor manufacturer to develop a replacement device.
 - Resolution Accomplished:** YES NO
 - Action Required if Not Resolved:** [Empty text area]
 - Documented Cost Avoidance:** [Empty text area]
 - Documented Resolution Cost:** [Empty text area]

Viewable System & Part Data

Part Number

Vendor Part

Cost Metrics

Obsolescence Resolution

OMIS™ Security Implementation

The screenshot shows the OMIS Work Station interface with the following sections:

- Left Sidebar:**
 - Export Forms:** TT Vendor Data, Export Assy BOM as XML, Export Assy BOM as XLS.
 - Import Forms:** GIDEP Alert Data, TT Alert Data, Sourcing Issues, Vendor Sourcing Issues, VA Class Import, Relex Data.
 - Application Queries:** App Data For Config Part Number, App Data For Mfr Part, App Data For NIIN, App Data For Generic.
 - Data Management:** Cage Code, Add Cage Code, Copy Existing PL, Copy Mapping Data.
 - Security Forms KDM:** Manage Users, Users Exceptions, Manage KDM Groups, List KDM Accounts.
 - Security Forms NT:** List NT Accounts, List NT Groups.
- Tree View:** Shows a hierarchical tree structure under '(Allow | Deny) OMIS OMIS - Obsolescence Management Inf'. The 'AIR' node is expanded, showing items like AIR-BOMs, AY-8B, COMMON, E2-C, EA-6B, F-14, F-15, and FA-18, each with sub-items such as 0002-0000, 129000-59, etc.
- User Exceptions:** This panel allows setting exceptions for specific users. It includes fields for 'Select User' (mcquilla - McQuillan, Charles), 'User Name' (mcquilla), and 'Full Name' (McQuillan, Charles). It has two main sections: 'Allowed items:' and 'Denied items:'.
 - Allowed items:** Contains items: AIR, LAND, SURFACE, UNDERSEA. The 'UNDERSEA' item is highlighted with a blue border.
 - Denied items:** Contains items: F-14, 0002-0000, 242576-4, 260625. The '242576-4' and '260625' items are highlighted with red borders.
- Text Labels:**
 - Restricted Access:** A list of denied items: F-14 Platform, AN/ARR-75 System, WRA 242576-4, SRA 260625.
 - Allowed access to:** AIR, LAND, SURFACE and UNDERSEA Systems.

Obsolescence Alert Reports

Periodic Monitoring Reports

Alerts Identify –

- All new system component source obsolescence
- System Impact
- Resolution Recommendations

One Component Obsolete, Another OEM Component is Still Available

Component Obsolete, Alternate Component Is Recommended

Component Obsolete; but now Is available as an Aftermarket Manufactured Part

CONFIGURATION PART NUMBER: 401-202404					
ALERT PART NUMBER	ALERT DESCRIPTION	ALERTING CASE	ALERTING MFG	LAST BUY DATE	GIDEP ALERT
M24C04-WMN3	PART DISCONTINUED	50058	ST MICROELECTRONICS		
AFFECTED SYSTEM	AFFECTED UNIT/WRA	AFFECTED MODULE/S			
H-60 (HH-60H, SH-60B, SH-60F, MH-60R, & MH-60S)	HARRIS CDL HAWKLINK (AN/ARQ-55 & AN/GRQ- VRC001 (CCA, VIDEO/RADAR) 4 - CDL HAWKLINK PROGRAM)	VRC001 (CCA, VIDEO/RADAR)			
	HARRIS CDL HAWKLINK (AN/ARQ-55 & VRC001 (CCA, VIDEO/RADAR) AN/RSR-4 - CDL HAWKLINK PROGRAM)	VRC001 (CCA, VIDEO/RADAR)			
	MH-60R/S (MH-60R & MH-60S)	HARRIS CDL HAWKLINK (AN/ARQ-55 & AN/GRQ- VRC001 (CCA, VIDEO/RADAR) 4 - CDL HAWKLINK PROGRAM)			
RECOMMENDATION: PART LIST ONLY SHOWED PARTIAL PART NUMBERS. M24C04 AND AT24C04N. LISTED ARE PIN'S BASED ON THE INFORMATION GIVEN FROM THE PART LIST.					
CONFIGURATION PART NUMBER: 5962-8992801EA					
ALERT PART NUMBER	ALERT DESCRIPTION	ALERTING CASE	ALERTING MFG	LAST BUY DATE	GIDEP ALERT
TDC1044AB9C	NEW PART NUMBER	U5969	FORCE TECHNOLOGIES LTD		
AFFECTED SYSTEM	AFFECTED UNIT/WRA	AFFECTED MODULE/S			
H-60 (HH-60H, SH-60B, SH-60F, MH-60R, & MH-60S)	SH-60B (SEAHAWK; PLATFORM FOR THE LIGHT AIRBORNE MULTI-PURPOSE SYSTEM (LAMPS) MARK II MISSION)	1041797-2V1 (CCA, DIGITAL FREQUENCY DISCRIMINATOR)			
	SH-60B (SEAHAWK; PLATFORM FOR THE LIGHT AIRBORNE MULTI-PURPOSE SYSTEM (LAMPS) MARK II MISSION)	1041797-2V1 (CCA, DIGITAL FREQUENCY DISCRIMINATOR)			
	SH-60B (SEAHAWK; PLATFORM FOR THE AN/ALQ-142 (AN/ALQ-142; ELECTRONIC LIGHT AIRBORNE MULTI-PURPOSE SYSTEM COUNTERMEASURES RECEIVING SET) (LAMPS) MARK II MISSION)	1041797-2V1 (CCA, DIGITAL FREQUENCY DISCRIMINATOR)			
RECOMMENDATION: PIN 5962-8992801EA IS NO LONGER IN PRODUCTION BY ORIGINAL OEM. A COMMERCIAL PLASTIC VERSION PIN TDC1044AN9C IS ALSO NO LONGER IN PRODUCTION BY FAIRCHILD BUT REI HAS INVENTORY AND WIP. CHECK BROKER MARKET FOR RESIDUAL STOCK OF PIN 5962-8992801EA , TDC1044AB9C, AND TDC1044AN9C. ADDITIONALLY, FORCE TECHNOLOGIES HAS LIMITED STOCK AVAILABLE OF TDC1044AN9C.					
CONFIGURATION PART NUMBER: 5962-8153001MYA					
ALERT PART NUMBER	ALERT DESCRIPTION	ALERTING CASE	ALERTING MFG	LAST BUY DATE	GIDEP ALERT
5962-9153001IVYA	LIFE TIME BUY ISSUED	27014	NATIONAL SEMICONDUCTOR	03-DEC-2006	AH6-D-08-0007
AFFECTED SYSTEM	AFFECTED UNIT/WRA	AFFECTED MODULE/S			
H-60 (HH-60H, SH-60B, SH-60F, MH-60R, & MH-60S)	MH-60R ((ROMEO) SEAHAWK MULT-MISSION	MMR OBSOLETE PARTS (MMR OBSOLETE PARTS)			

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DMSMS Services Span All Acquisition Phases

NUWC Keyport's Obsolescence Management Services Span the Complete Life Cycle of Systems



- **DEVELOP** DMSMS Charters / DMSMS Plans
- Develop Systems Obs. Cost-Over-Time Projections to Minimize Tech Refresh Redesign Costs
- Initial Technology Review of Prototype/Engr Design Model (EDM) System BOMS at PDR

- **DEVELOP** DMSMS Management Teams (DMTs) / Support DMSMS Related Issues / Meetings
- Follow-On Technology Review of Prototype/Engr Design Model (EDM) System BOMS at CDR
- Perform Technology Trending / Technology Road Mapping
- Work with Program Office/Prime Contractors (Integrators) to Insert DMSMS Requirements into ALL Production & Follow-On / PBL Contracts

- **FACILITATE** DMSMS Management Teams (DMTs) / Support DMSMS Related Issues/Meetings
- Research Technical Data to develop Bills of Material
- Load Bills of Materials into OMIST™ / Define System Obsolescence
- Recommend Solutions for Obsolescence Issues Based on a Best Value Analysis
- Track Obsolescence Cases to Completion

- **PROACTIVELY MONITOR** Electronic Parts and COTS Assemblies for Obsolescence
- Periodic Component / COTS Obsolescence ALERT Reports / Supportability Analysis Reports
- Provide Out-Year Budgetary Estimates to Mitigate Obsolescence Issues
- Update DMSMS Charters / DMSMS Plans

DMSMS Services CAN and SHOULD be utilized in All Phases of the Acquisition Life Cycle.

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Benefits Of Organic DMSMS Management

- OEMs/System Integrators are often contractually required to manage system obsolescence.
 - Why add Organic DMSMS Management?
-
- Organic DMSMS Team is Neutral 3rd Party / Trusted Agent / Gov't DMSMS SME
 - ✓ Gov't DMSMS support acts as Trusted Agent, with "Oversight" into vendor engineering issues/solutions. Avoid unplanned redesigns!
 - ✓ Not profit-driven, only interested in ensuring solutions are most cost/schedule effective
 - Proprietary Document Concerns?
 - ✓ Vendors / Sub-Vendors designs "at risk" if they share data with OEM / System Integrator?
 - ✓ The Trade Secrets Act (18 U.S.C. § 1905) imposes non-disclosure obligations on all federal employees, making organic sustainment databases secure, safe havens for Vendor data
 - Organic DMSMS Team in for Long Haul - Through EOL, Not just End Of Contract)
 - Sensitive System Data Protected

OMIS™ Security Levels protect data down to the Module / LRU Level

Cost Avoidance Example

Cost avoidance is primarily a result of avoiding
UNPLANNED vendor proposed redesigns.



VIRGINIA Class

More than **\$92M** in cost avoidance has been realized since 2001

Systems Affected:

Multiple Non-Propulsion and HM&E Electronics including: Ship Control, Secondary Propulsion, Weapons Launch Control System

EXAMPLE A) Cost Av. of \$4.1M at Block III / Propulsion-Related PC Board 9-bit Encoder IC Chips
A **\$4.1M Redesign** was recommended to resolve an obsolescence issue involving two Encoder IC Chips. Keyport's OMIS™ Database identified **Replacement ICs** for two obsolete Encoder Chips on the same LRU - once validated, resolution extended existing Block I and II design through Block III.

EXAMPLE B) Cost Av. of \$2.5M / Impressed Current Cathodic Protection, DC-DC Converter:
A **Life-of-Type buy** was completed to support ICCP until the next planned refresh, avoiding **\$2.5M Redesign**.

EXAMPLE C) Cost Av. of \$1.9M / Thin Line Towed Array Handling System, HP748 Processor:
A combination **Reclamation Plan and Life-of-Type buy** resolution was established to support TLTAHS until the next planned refresh, avoiding **\$1.9M Redesign**.

Cost Avoidance Example

TRIDENT SHIP CONTROL OBSOLESCENCE



An \$42K Obsolescence Analysis yields an \$80M Cost Avoidance / Full System Redesign Averted

Vendor informed PMS392 of an emergent, unsolicited **\$150M Redesign** of Trident SCS to resolve current obsolescence.

- ✓ Keyport worked with NSWC Carderock, Electric Boat, NAVICP, and IMF Bangor to define current Electronic and HM&E obsolescence across entire Trident SCS
- ✓ Keyport's **SCS Obsolescence Analysis** rcc'd resolution projections of **\$5M**.
- ✓ Vendor stated a need of add'l **\$65M** to implement modernization and low maintenance mods, requesting **\$70M**
- ✓ Total Cost Avoidance = **\$80M**
- ✓ Keyport's **SCS Electronic/HM&E Obsolescence Analysis Cost** = **\$42K**

Undersea Systems In OMIS™

Proactive Management

Obsolescence Management Information System (OMIS™)
Obsolescence Tracking/Forecasting Analysis Web Site



- System/Platform Approach
- Lifecycle/Impact Prediction
- Budget Planning Information
- Synergy between platforms allows common solutions



Advanced SEAL Delivery System (ASDS) Submarine
• 12 Systems Supported



SSN 21 SEAWOLF Class Submarine
• 29 Systems Supported



Carry-On Equipment (COE)
• 3 Systems Supported



MK 54 Lightweight Torpedo
• 3 Systems Supported
(Electronics, Training, And Test Sets)



SSN 688 Los Angeles Class Submarine
• 30 Systems Supported



SSBN 726 Trident (SSBN) & SSGN Class Submarine
• 39 Systems Supported



SSN 774 Virginia Class Submarine
• 26 Systems Supported



• Submarine Periscope / Imaging
23 Systems Supported
• Electronic Warfare
15 System Supported



Submarine Rescue Diving Recompression System (SRDRS)
• 5 Systems Supported

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Surface / Space Systems In OMIS™



**PMW150 Naval Tactical
Command Support
System Supported**



PMW150GCCS-M Global
Command and Control
System – Maritime



Carrier Hull Mechanical and
Electrical (HM&E) Systems
NAVSESS Philadelphia



USMC Expeditionary Fighting Vehicle (EFV)
• 78 Systems Supported



INTERNATIONAL PROGRAM OFFICE
PMW780 Airborne
Networking & Integration
▪ 4 Systems Supported



**PMW770 – Common
Submarine Radio Room
▪ 5 Versions (Archived)**



PMW150 Tactical
Command & Control
System Supported



DDG 1000
Zumwalt Class Destroyer
• 49 Systems Supported



PMW170 – C4-I
▪ 13 Systems



**PMW750 AN/USC-60A
Flyaway Tri-Band Satellite
System Supported**



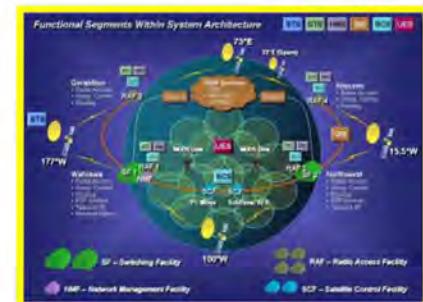
**CG-47 Ticonderoga Class
Guided-Missile Cruiser**
• 1 System (ARCHIVED)



Littoral Combat Ships
(LCS) Mine Warfare
Mission Modules
* 5 Systems (Archived)



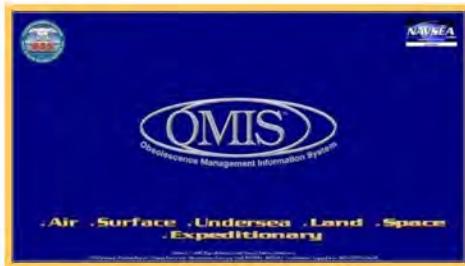
PMW790 Shore &
Expeditionary Integration
Systems
3 Systems Supported



PMW146 MOUS Mobile
User Objective System
7 Systems Supported

Aircraft Systems In OMIS™

Proactive Management



Obsolescence Management



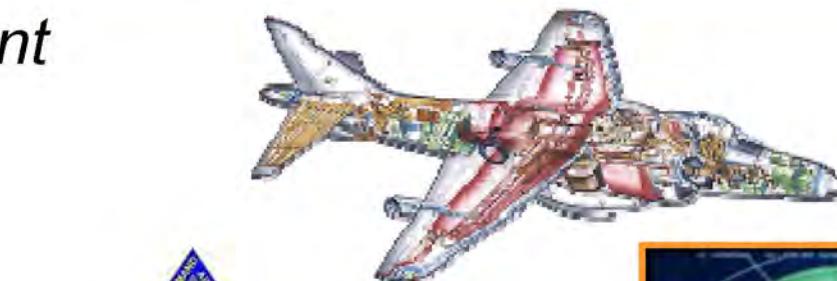
AV-8B
•36 Systems (Archived)



Air Support &
Common Equipment
•6 Systems Supported



EA-6B Prowler
•3 Systems Supported



Air Combat Electronics
•200 Systems Supported



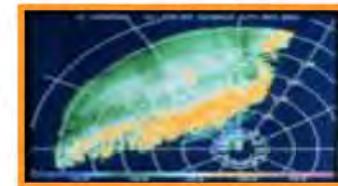
P-3 Orion
•9 Systems Supported



E-2C Hawkeye
•25 Systems Supported



EP-3
•115 Systems
Supported
(Archived)



ATC-IDS Radar Systems
•57 Systems Supported
(inactive)



F/A-18 Hornet
•19 Systems Supported
(Archived)



H-60 B/H/F Legacy &
MH-60 R/S Seahawk
CH-53 Sea Stallion
•326 Systems Supported



P-8A Poseidon MMA
•23 Systems Supported



V-22 Osprey
•66 Systems Supported
(inactive)

In Summary...

- Keyport's DMSMS Role: Own /Maintain one of two ASN recognized DMSMS Tools - OMIS™
(Software Optimization Upgrade in Process)
- Services include:
 - ✓ Develop/review/revise **DMSMS Plans**
 - ✓ Organize and lead **DMSMS Management Teams (DMTs)**
 - ✓ Provide regular **System Obsolescence Health Assessments** – electronic and HM&E
 - ✓ Provide **Technical Expertise** in developing DMSMS resolutions
 - ✓ **Analysis of Options** for proposed DMSMS mitigation choices (cost, supportability profile, life-cycle requirements)
 - ✓ Track and capture **System/Program metrics**
 - ✓ Provide **Cross-System/Platform/Service Visibility** and resolution of obsolescence issues
 - ✓ **Analysis of New Designs** – early in the design phase!
 - ✓ Minimize Cost to Customer via implementation of **Custom Engineered Solutions (CES)** mitigation options



Over 50 Obsolescence Management Subject Matter Experts!