# COTS Insertion Supportability with an Attitude


## The Application of COTS in the Aircraft Carrier Tactical Support Center (CV-TSC)

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# PRESENTATION OVERVIEW

- CV-TSC Operational Mission
- PC-MSAS Technology Insertion
- PC-MSAS Supportability Considerations
  - Application of Market Research Process
  - Tech Refresh / Tech Insertion
  - Certificate of Supportability
- Summary

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# OPERATIONAL MISSION

- Support Tactical Employment of ASW Aircraft Assigned to the Carrier
  - Mission Planning
  - In-flight Support
  - Post-Mission Acoustics Analysis, Mission Replay, and Intelligence Collection
- Provide Real-Time Command, Control, & Communications as ASW Module of the Carrier Combat Direction System
- Function as Force ASW Commander (ASWC) Module when ASWC is Embarked
- Support Surface Surveillance Operations:
  - Contact Reporting
- Multi-mission Support for S-3 and SH-60F Aircraft

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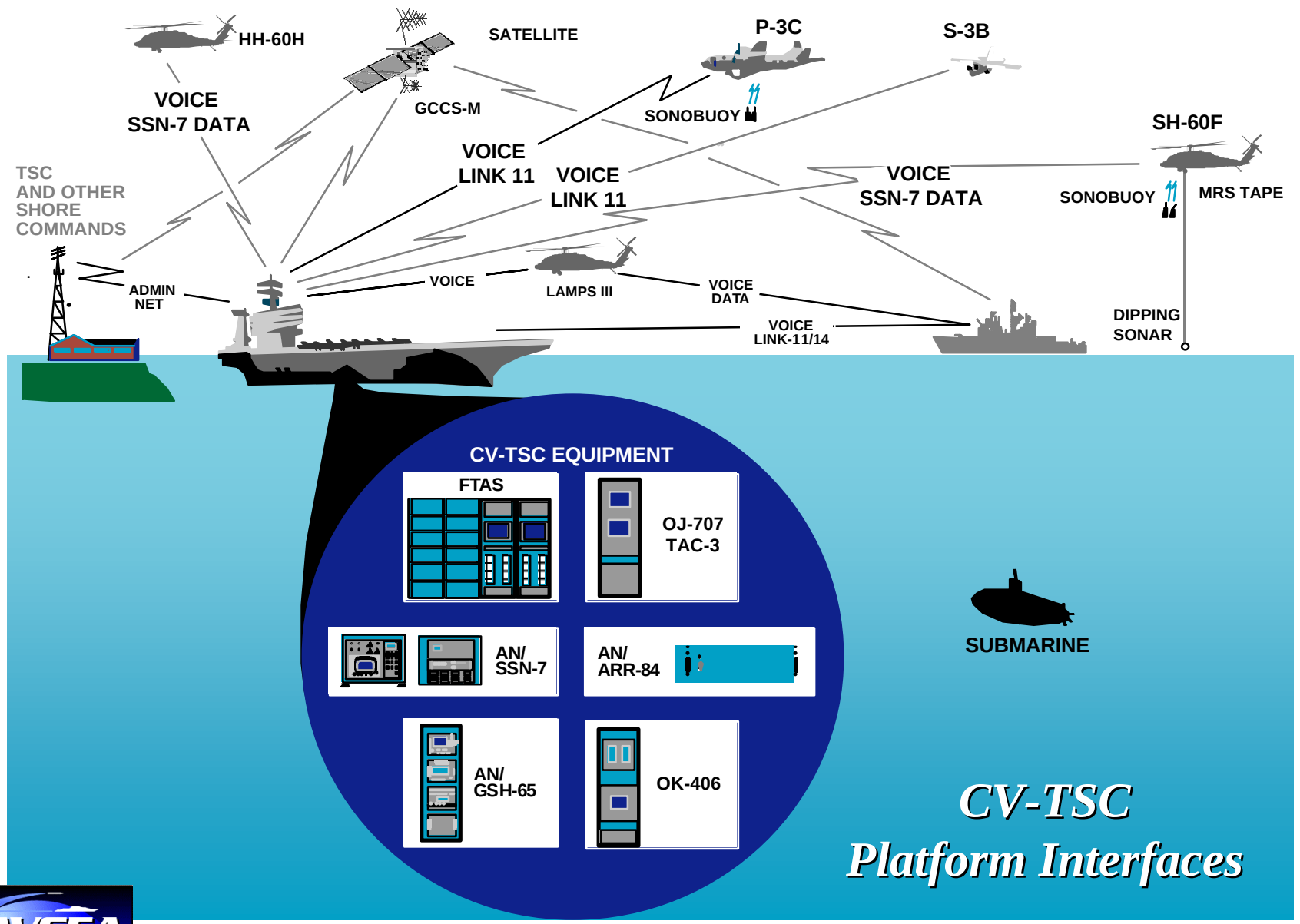


# CV-TSC Platform Interfaces

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# CV-TACTICAL SUPPORT CENTER
## COTS INSERTION PROJECTS

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- AN/SQQ-34A CV-TSC
- AN/SQQ-34B CV-TSC
- Integrated Warfare Commander Cell
- Real Time Sensor Data Link
- Shipboard Tactical Data Interface (STDI)
- Multi-Sensor Analysis System (MSAS)

# PC-MSAS TECHNOLOGY INSERTION

- Acoustic Analysis Subsystem of CV-TSC
- Provides Processing and Display of Sensor Data
  - Narrow-Band Acoustic Analysis
  - Active Emission Detection
  - Analysis of FLIR / ISAR Imagery


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# PC MULTI-SENSOR ANALYSIS SYSTEM
## FEATURES / ARCHITECTURE

- Capability / Technology Upgrade to CV-TSC Fast Time Analysis System
  - Migration From VME / UNIX to PCI / NT
  - PCI “Technology Dividend”
- Scalable Processing Power and Bandwidth
- Client-Server Model Architecture
- Switched Network Interconnect

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# PCI ARCHITECTURE ADVANTAGES


- PC-MSAS Provides
  - An Open, Network Centric Architecture
  - Interoperability
  - Adaptability (scalable to other applications)
  - A Clear “Path to the Future” For Sensor Processing
  - Continuing Performance Increases
  - Decreasing Acquisition and Support Costs

# PC-MSAS SUPPORTABILITY CONSIDERATIONS

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- Market Research
- Tech Refresh / Tech Insertion
- Certificate of Supportability

# MARKET RESEARCH - DEFINITION

- Continuing Effort By Acquisition and Development Activities To Monitor Commercial Market Technology Developments
- Sources of Data include:
  - Industry Publications, Trade Shows, Journals, Catalogs, Data Sheets, Industry Interface
- May be Focused on General Technology Trends or a Well-Defined DoD Requirement
- May Result in Specific COTS Recommendation For Milestone Decision or Tech-Refresh / Tech Insertion
- Function of Acquisition Managers, Systems Engineering IPT, Navy Labs, Life-Cycle Support IPT, Academia, Etc

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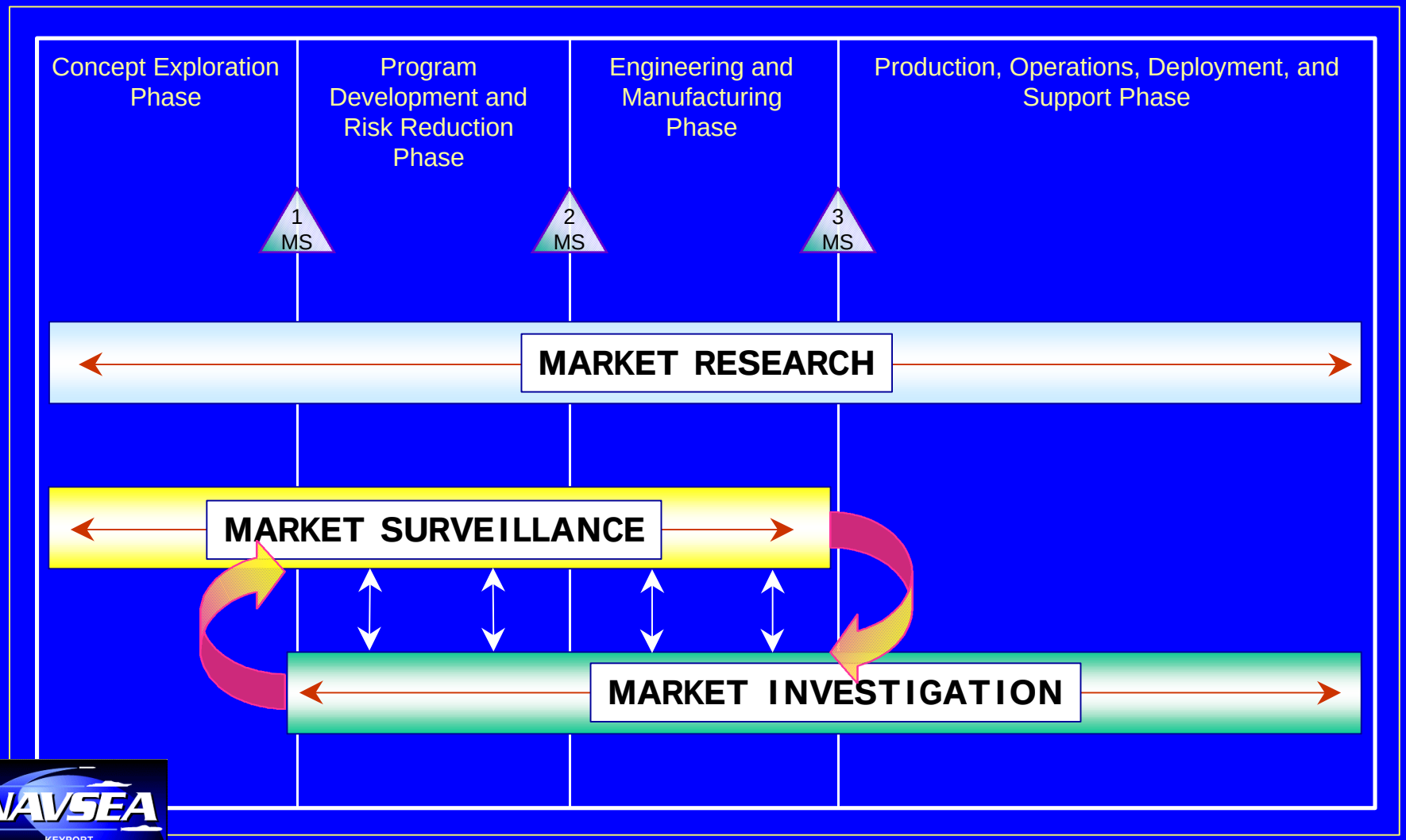
# MARKET RESEARCH IN THE ACQUISITION PROCESS

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# PC-MSAS MARKET RESEARCH RESULTS


- PCI Provides:
  - The Lowest Cost / Performance Ratio Available
  - Numerous Vendor Choices For Both Hardware and Software
- NT Operating System
  - Mainstream Development Environment
  - Mainstream Code Base
  - Minimizes Run Time License Fees / Tech Support

***Market Research By Program IPT!***

# TECH REFRESH AND INSERTION

## TECH REFRESH

- Systems Engineering / Logistics Process
- Predicted Upon Commercial Product, Availability (Obsolescence)
- Strive For Seamless Transition in Functionality / Support
- May Inherently Improve System Performance (But This is Not the Driver)

## TECH INSERTION

- Systems Engineering Process (With Logistics Impact / Involvement)
- Infuses Technology Enhancement / System Performance Upgrades
- May Also Be Driven By Desire to Reduce TOC

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# PC-MSAS TECH REFRESH / TECH INSERTION STUDY RESULTS


- Low Component Cost
  - Allows Frequent Technology Refreshes to Effectively Manage COTS Obsolescence
- Commercial Interfaces
  - Supports Incremental Capability (Tech Insertion) Improvements
- Tiered Architecture / Software Layering
  - Promotes Effective Management of Legacy Hardware and Software

# PC-MSAS ACQUISITION COST ADVANTAGES

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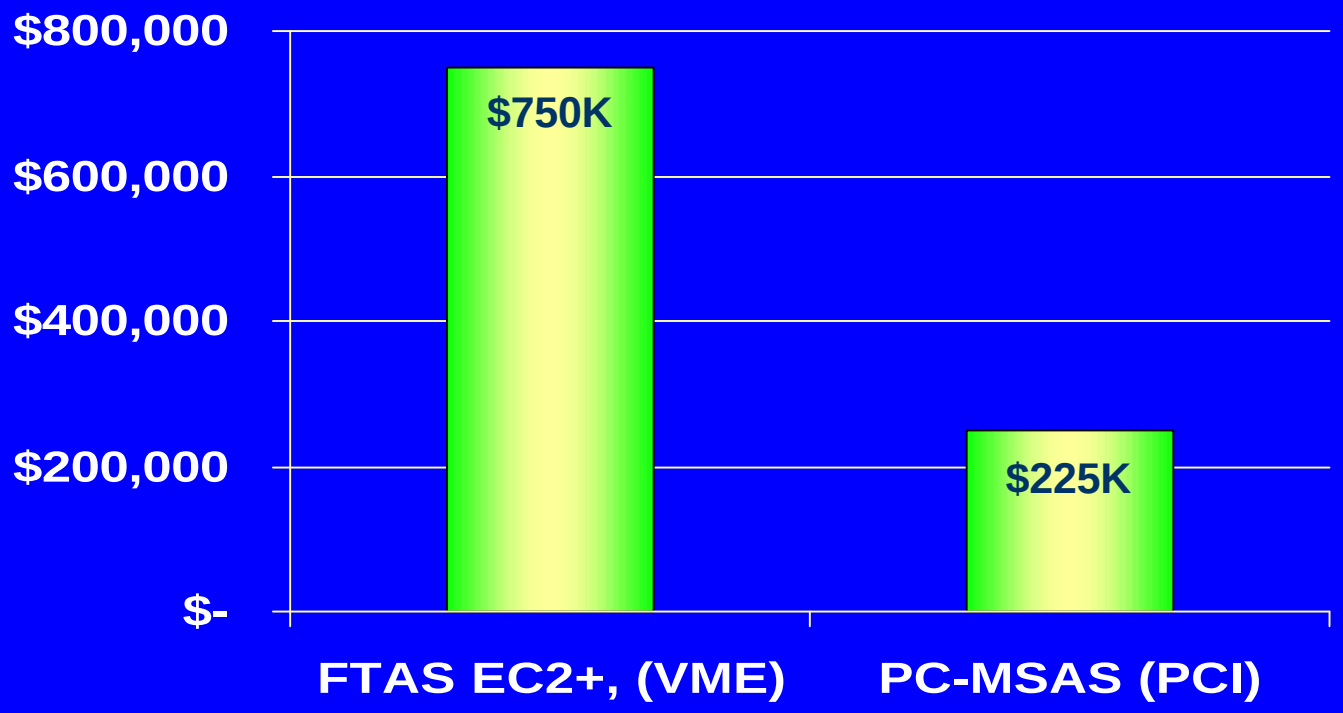
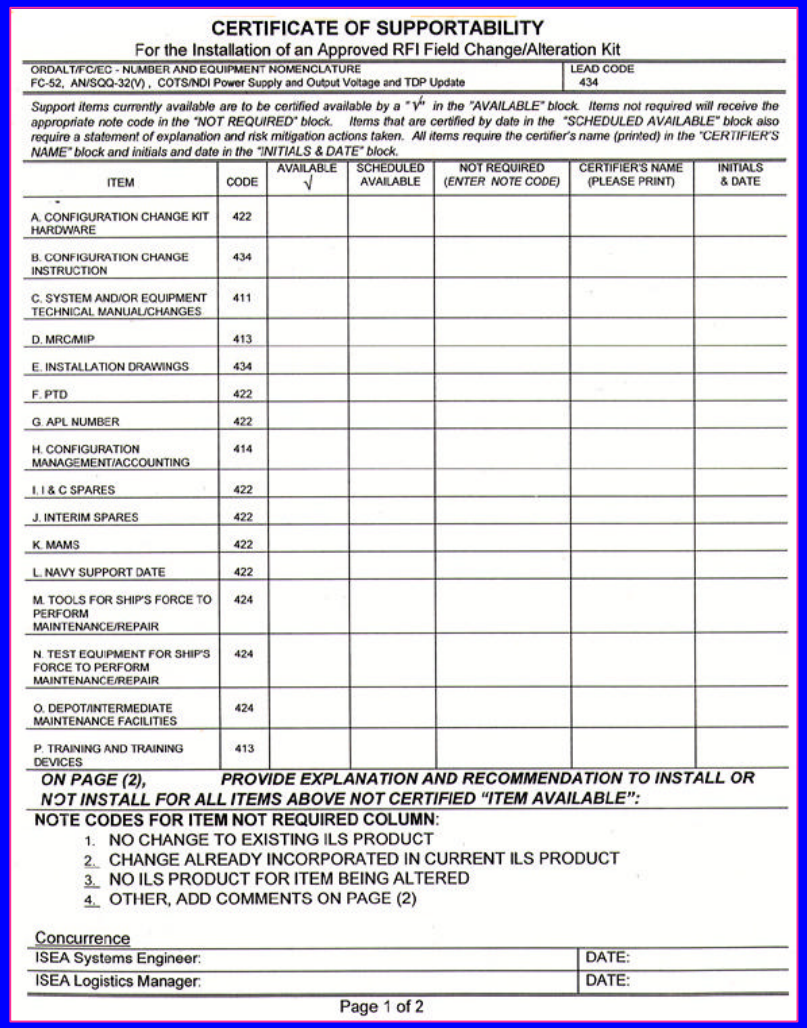
- VME vs. PCI System Acquisition Cost (Total Acquisition Savings of $8M)



# CERTIFICATE OF SUPPORTABILITY PROCESS



**CERTIFICATE OF SUPPORTABILITY**

For the Installation of an Approved RFI Field Change/Alteration Kit

| ORDALT/FC/EC - NUMBER AND EQUIPMENT NOMENCLATURE | LEAD CODE |
|---|---|
| FC-52, AN/SQQ-32(V) , COTS/NDI Power Supply and Output Voltage and TDP Update | 434 |

*Support items currently available are to be certified available by a "√" in the "AVAILABLE" block. Items not required will receive the appropriate note code in the "NOT REQUIRED" block. Items that are certified by date in the "SCHEDULED AVAILABLE" block also require a statement of explanation and risk mitigation actions taken. All items require the certifier's name (printed) in the "CERTIFIER'S NAME" block and initials and date in the "INITIALS & DATE" block.*

| ITEM | CODE | AVAILABLE √ | SCHEDULED AVAILABLE | NOT REQUIRED (ENTER NOTE CODE) | CERTIFIER'S NAME (PLEASE PRINT) | INITIALS & DATE |
|---|---|---|---|---|---|---|
| A. CONFIGURATION CHANGE KIT HARDWARE | 422 | | | | | |
| B. CONFIGURATION CHANGE INSTRUCTION | 434 | | | | | |
| C. SYSTEM AND/OR EQUIPMENT TECHNICAL MANUAL/CHANGES | 411 | | | | | |
| D. MRC/MIP | 413 | | | | | |
| E. INSTALLATION DRAWINGS | 434 | | | | | |
| F. PTD | 422 | | | | | |
| G. APL NUMBER | 422 | | | | | |
| H. CONFIGURATION MANAGEMENT/ACCOUNTING | 414 | | | | | |
| I. I & C SPARES | 422 | | | | | |
| J. INTERIM SPARES | 422 | | | | | |
| K. MAMS | 422 | | | | | |
| L. NAVY SUPPORT DATE | 422 | | | | | |
| M. TOOLS FOR SHIP'S FORCE TO PERFORM MAINTENANCE/REPAIR | 424 | | | | | |
| N. TEST EQUIPMENT FOR SHIP'S FORCE TO PERFORM MAINTENANCE/REPAIR | 424 | | | | | |
| O. DEPOT/INTERMEDIATE MAINTENANCE FACILITIES | 424 | | | | | |
| P. TRAINING AND TRAINING DEVICES | 413 | | | | | |

***ON PAGE (2), PROVIDE EXPLANATION AND RECOMMENDATION TO INSTALL OR NOT INSTALL FOR ALL ITEMS ABOVE NOT CERTIFIED "ITEM AVAILABLE":***

**NOTE CODES FOR ITEM NOT REQUIRED COLUMN:**

1. NO CHANGE TO EXISTING ILS PRODUCT
2. CHANGE ALREADY INCORPORATED IN CURRENT ILS PRODUCT
3. NO ILS PRODUCT FOR ITEM BEING ALTERED
4. OTHER, ADD COMMENTS ON PAGE (2)

Concurrence

| | |
|---|---|
| ISEA Systems Engineer: | DATE: |
| ISEA Logistics Manager: | DATE: |

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- Process used to Ensure COTS System is Supportable Prior to Fielding
- All Logistics Elements must be Certified Complete
- Review by Engineering & Logistics IPT Leads
- Final Approval by Systems Engineer & Fleet Liaison

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# PC-MSAS BUILD / DELIVERY SCHEDULE

| | | |
|---|---|---|
| MTT JAX | MAY 00 | COMPLETED |
| CVN-65 | JUN 00 | COMPLETED |
| CVN-70 | AUG 00 | COMPLETED |
| CVN-71 | AUG 00 | UNDERWAY |
| CVN-68 | SEP 00 | UNDERWAY |

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# SUMMARY

- COTS Insertion Can be Effectively Managed
  - Market Research One Key to Successful COTS Insertion Decisions
- Open System Architecture Critical for Future Tech Refresh and Tech Insertions
- COTS Insertion Requires Team of Engineers & Logisticians to Ensure System is Ready for Fleet Deployment
  - Certify Supportability Prior to Deployment

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