



# MEARS

## Multi-User ECP Automated Review System

**Automated Test System**

**27 October, 2004**

**Mr. John Rogers, MEARS Program Manager**

**AMSAM-MMC-MM-LI**

**Mr. Bob Baccus, MEARS Project Lead**

**Contractor, Team ITSS**

**(256) 842-0864 DSN: 788-0864**





# MEARS



- Saves Time and Money
- Flexibility of Product
- Best Business Practice
- Built to meet Government Requirements





# MEARS



•Average number of pages per ECP	100
•Average number of ECPs per year	66
•Average number of users	175
•Average price for 1 sheet of paper	\$0.01
•Average price for postage per doc	\$5.00
•Annual Paper Cost	\$11,550.00
•Annual Postage Cost	\$57,750.00
•Annual Reproduction Cost	\$15,000.00
•Total Annual Cost of Paper	\$84,300.00





# What's MEARS



- Automates the business process of engineering change
- Users in geographically dispersed locations can communicate
- Provides for concurrent creation and review of information
- Enables users to comment, redline, vote and archive data
- Allows for electronic Configuration Control Board (CCB)
- Integrates data with CM relational databases, PDMs, etc
- Managers can monitor/manage the engineer change process





# Background



- **Continual Improvement Through Evolutionary Development**
  - **Developed after CALS Cost Study - FY 90**
  - **Selected by JLSC, Mid 90's as the ECP tool of choice for DoD**
  - **Released Web Version, Late 98**
  - **Enhanced the system with XML capabilities - Aug 01**  
**Joint Engineering Change Management Model-JECMM**





# Why MEARS?



**Saves Time**

**Saves Money**



**Simplifies Processes**





# Time



- **Has reduced ECP review time by 85%**
- **MEARS review time for standard ECPs**
  - **Comments due: 11 days**
  - **CCB date: 14 days**
- **Can be as quick as 1 day**
- **Populates relational databases without duplicating data entry (CMIS, JEDMICS...)**





# Money



- **Cheaper to produce ECP revisions**
- **Reduces amount of paper used**
- **The time factor in approving changes is your biggest money savings.**







# Process Simplification



- USCG Short Form to submit ECRs from the field
- Allows for preliminary and formal review processes online.
- ECP status at a glance with a chain of command review structure.





# Preliminary Program



# Formal Program

Create

Review

ECP123P

ECP123P

ECP123F

Create

Review

ECP123F

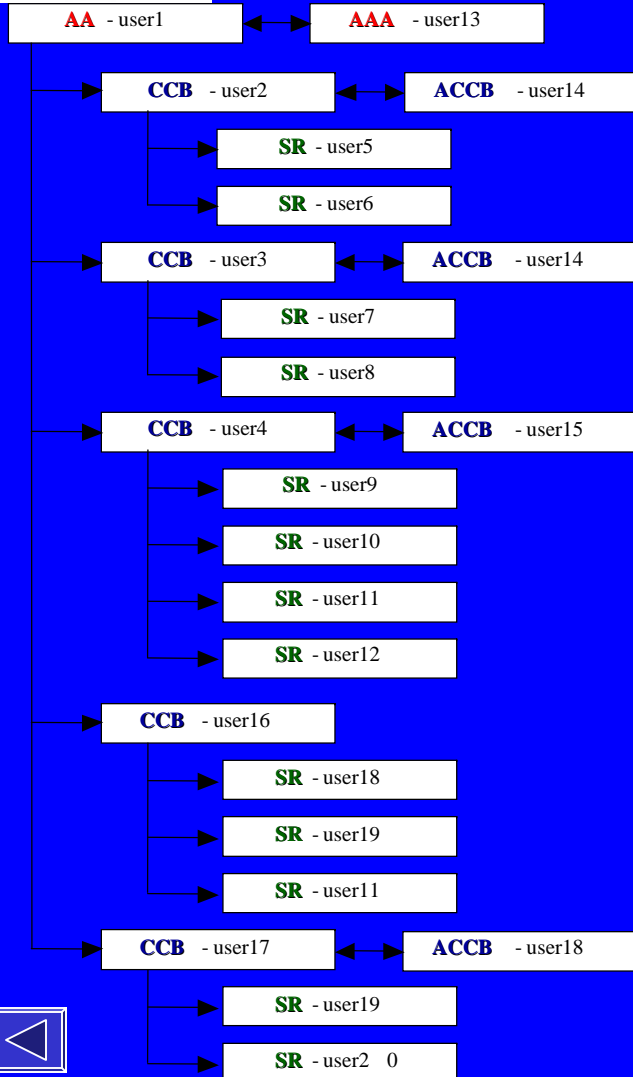




# MEARS Review Hierarchy



Sample ECP Review Hierarchy



**AA – Approval Authority**

**AAA – Alternate Approval Authority**

**CCB – Configuration Control Board Member**

**ACCB – Alternate Configuration Control Board Member**

**SR – Support Reviewer**





## More Information



- **MEARS is a Web Based Tool**
  - **Owned by the Government (GOTS)**
  - **Managed by the US Army-AMCOM**
  - **Supports Project Management Offices/Agencies**
  - **Reimbursable Funded Program**
- **MEARS has Evolved Over Ten Years**
  - **Customer Driven Requirements**
  - **Changes in Standards**
  - **Improvements in Technology**





# Team



- **Program Manager**  
**John Rogers (Government)**
- **Technical Project Lead**  
**Bob Baccus (Contractor)**
- **Developers**
- **DBA**
- **System Administration**
- **Customer Support**





# Agencies/PMO's/Contractors



## MEARS Users

- ARMY
- USMC
- USCG
- USAF
- MDA
- DCMA
- NSWC
- ARM
- AVENGER
- Lower Tier – PATRIOT
- PM Bradley
- HAWK
- MLRS
- PEOAVN (CH47)
- AM-RDEC
- General Dynamics
- Boeing
- Lockheed Martin
- Northrop Grumman
- United Defense
- AM General





## Overview of the ECP Process



- **Create**
- **Review**
- **Approve/Disapprove**
- **Integrate**
- **Archive**





**CREATE**



Manufacturers  
Electronically create ECP

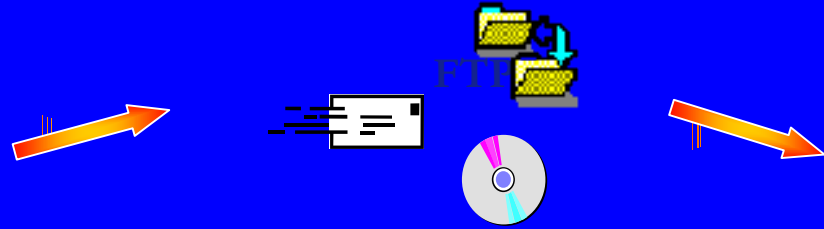
# How Does MEARS Work?



**SYSTEM UTILITIES**



MEARS Customer Support  
Verifies ECP functionality  
and moves to review.



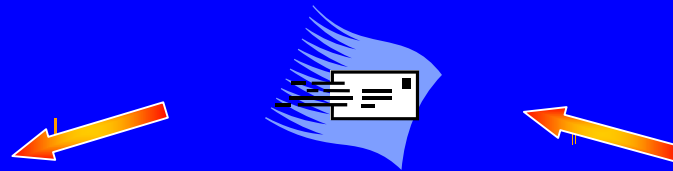
Notification sent to MEARS

**REVIEW**



Concurrent Review and  
Status Monitoring

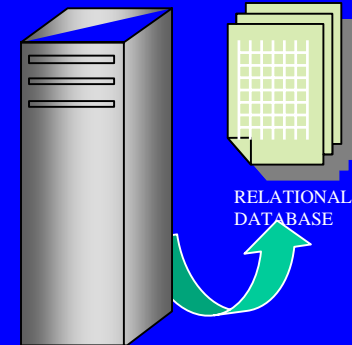
Notification sent to Reviewers



Reviewer Comments and Votes



**MEARS DATABASE**



ECP Repository and CM  
Database Population





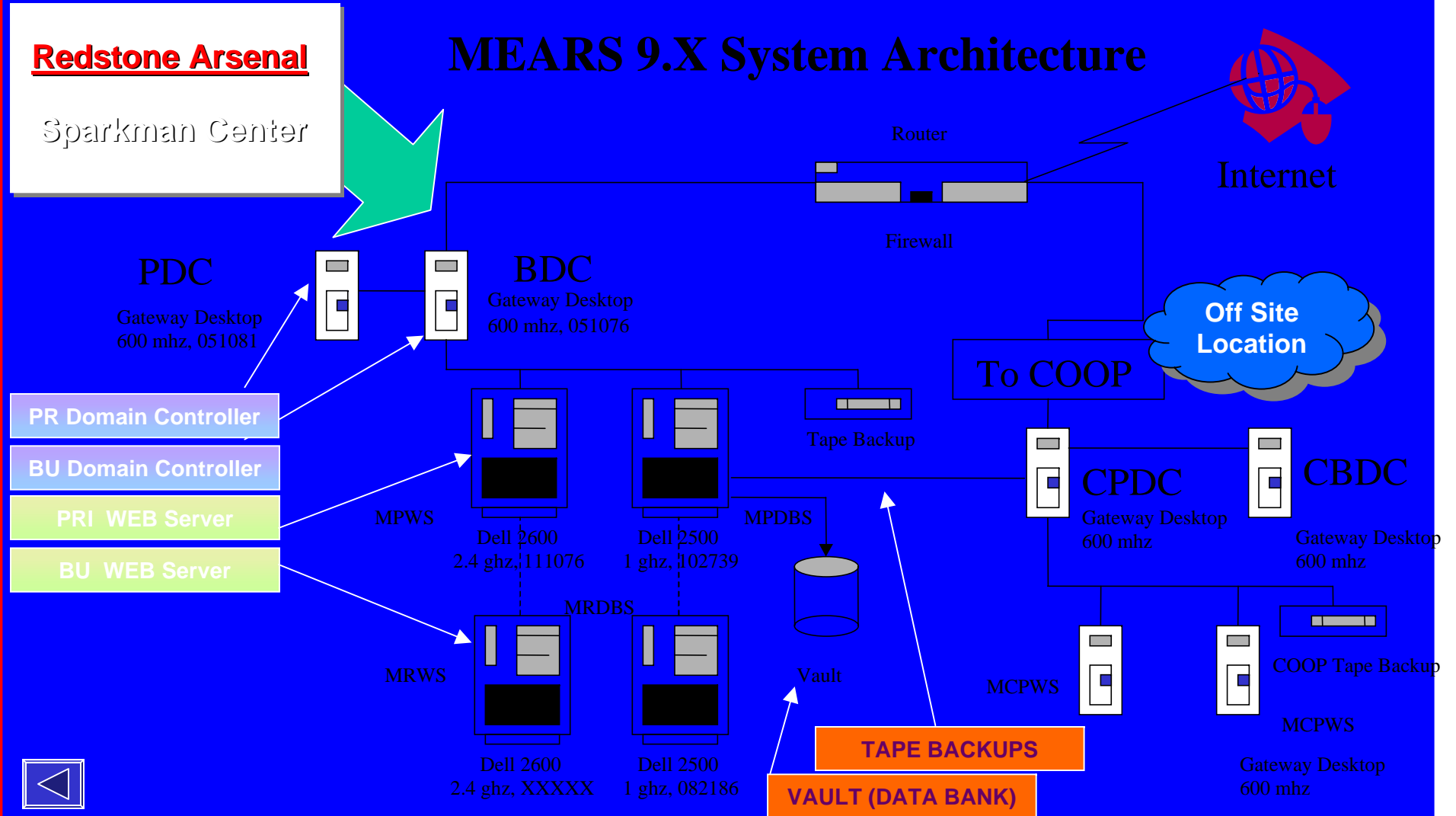
# Where is MEARS Located?



## Redstone Arsenal

Sparkman Center

## MEARS 9.X System Architecture





## Deliverables



- **Web Based Tool**
- **Training**
- **Support Services**





# Services Offered



- **Customer Support:**

- ECP/RFD/RFW Processing/User Notification**

- User Account Maintenance**

- Help Desk**

- Refresher Training**

- Working Group Meetings**

- **System Administration:**

- Server Maintenance and Upgrades**

- Data Backups**

- **Technical:**

- Software Upgrades**





## Features and Benefits



- **Streamlines process**
- **Saves paper, time, and money**
- **Encourages cooperative and concurrent document processing**
- **Allows managers to monitor the status of documents**
- **Controls access to information by user id and password**
- **Uses standard for document content**
- **Enforces mandatory data items during document creation**
- **Enhanced system with XML capabilities**





## User Feedback



**Angie Smith                      CMIS/JEDMICS/MEARS PD**

**US Marine Corp Albany, GA                      DSN 567-5586**

“MEARS was deployed for selected Marine Corps tactical weapon programs in Dec 1999. Since deployment, MEARS has proven to be a user-friendly, dependable tool in the performance of configuration control and configuration status accounting (CSA) responsibilities.”





## User Feedback



**Eric Kessler**

**Engineering Performance Advocate**

**DCMA**

**DSN 328-0947**

“MEARS certainly is one of our DCMA successful practices. Beyond the basic function of the software, what I appreciate most is its flexibility for use with so many technologies of our customers.”





## User Feedback



**Jackie Crepeau**

**CM Patriot Project Office**

**Huntsville, AL**

**DSN 645-5396**

“We have had MEARS for 10 years.

MEARS Provides:

Digital representation of the change

Real time version of the change to all reviewers

The Change to be time stamped into the system

Record of all changes to be archived for future references”





## MEARS Vision



- Products of the highest quality that deliver “Best in class” value and performance.
- Customer Service that is courteous, responsive, and dependable.
- People who are professional, totally dedicated to exceeding expectations and always appreciative of our customer’s business.







# Learning More About MEARS



**Home Page:** <http://mears.army.mil>

**E-mail Address:** [mearssupport@redstone.army.mil](mailto:mearssupport@redstone.army.mil)

**Phone Number:** (256) 842-0864/DSN: 788-0864

**[MEARS Login](#)**





# Configuration Management

**MEARS**

This is what it looks like...





# ELEMENTS OF A CHANGE PACKAGE Preparation & Justification



ECP Pages

Distribution Statement **Page 1** Page 2 Page 3 Page 4 Page 5 Page 6 Page 7 Supplemental Information

1. Date (YYYYMMDD): 20030214  
2. Procuring Activity Number:  
3. DODAAC:  
4. Originator Name And Address \*

5. Classification Of ECP:  I  II  
6. Justification Code: C  
7. Priority: Urgent  
8. ECP Designation \*

9. Baseline Affected:  Functional  Allocated  Product  
10. Other Systems/Configuration Items Affected:  Yes  No  
11. Specifications Affected

12. Drawings/Documents Affected \*  
13. Title Of Change: M2770 - Revise Cables for Preparation Instructions and Tolerances.

14. Contract Number And Line Item \*  
15. Procuring Contracting Officer

16. Configuration Item Nomenclature \*  
17. In Production:  Yes  No  N/A

18. All Lower Level Items/Lowest Assembly Affected \*  
19. Description Of Change \*

20. Need For Change \*  
21. Production Effectivity By Serial Number

22. Effect On Production Delivery Schedule \*  
23. Retrofit  
24. Estimated Cost/Savings Under Contract:

25. Estimated Net Total Costs: 312000.00  
26. Submitting Activity Authorized Signature \*

Comments Save Page 1

Close





# ELEMENTS OF A CHANGE PACKAGE Preparation & Justification



ECP Pages

Distribution Statement | Page 1 | **Page 2** | Page 3 | Page 4 | Page 5 | Page 6 | Page 7 | Supplemental Information

ECP Number:

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Effects On Functional/Allocated Configuration Identification

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# ELEMENTS OF A CHANGE PACKAGE Preparation & Justification



**ECP Pages** [X]

Distribution Statement | Page 1 | Page 2 | **Page 3** | Page 4 | Page 5 | Page 6 | Page 7 | Supplemental Information

ECP Number:

Effects On Product Configuration Documentation/Identification, Logistics And Operations

44. Work Hours Per Unit To Install Retrofit Kits:  
a. Organization:  b. Intermediate:  c. Depot:  d. Other:

45. Work-Hours To Conduct System Test After Retrofit:

46. This Change Must Be Accomplished:

47. Is Contractor Field Service Engineering Required?  Yes  No

48. Out Of Service Time:

50. Date Contractual Authority Needed For: Production





# ELEMENTS OF A CHANGE PACKAGE Preparation & Justification - Cost Impact



ECP Pages

Distribution Statement Page 1 Page 2 Page 3 **Page 4** Page 5 Page 6 Page 7 Supplemental Information

51. Estimated Net Total Cost Impact (Use Parentheses For Savings) ECP Number: MI-C0812FR4A1

Scanned  
 Manual  
 Enclosure

FACTOR	Non Recurring	Unit	Quantity	Total (Recurring)	Tc
a. Production Costs/Savings					
(1) Configuration Item/CSCI					
(2) Factory Test Equipment	25000				
(3) Special Factory Tooling					
(4) Scrap					
(5) Engineering, Eng. Data Revision	125000				
(6) Revision Of Test Procedures					
(7) Qualification of New Items	60000				
(8) Subtotal of Prod Costs/Savings	210000.00				
b. Retrofit Costs					
(1) Engineering Data Revision		25500	4	102000.00	
(2) Prototype Testing					
(3) Kit Proof Testing					
(4) Retrofit Kits For Op. Systems					
(5) Prep Of MWD/TCTO/SC/ALT/TD					
(6) Special Tooling For Data St...					

Clear Grid

Comments Save Page 4

Close





# ELEMENTS OF A CHANGE PACKAGE Preparation & Justification - Cost Savings



ECP Pages

Distribution Statement | Page 1 | Page 2 | Page 3 | Page 4 | **Page 5** | Page 6 | Page 7 | Supplemental Information

52. Estimated Cost/Savings Summary, Related ECP: ECP Number: MI-C0812FR4A1  
(Use Parentheses For Savings)

Scanned  
 Manual  
 Enclosure

	CAGE Code	ECP Number	Costs/Savings Under Contract
a. Production Costs/Savings			
(1) Subtotal Production Costs/Savings			210000.00
b. Retrofit Costs			
(1) Subtotal Retrofit Costs			102000.00

New Requirements	CAGE Code	Non-Recurring Costs	Unit
(10) Provisioning Documentation			
(11) Oper Trmr/Trng Devices/Equip			
(12) Manuals/Spares, Repair Parts (for (11))			
(13) Maintenance Trmr/Trng Devices/Equip			

	CAGE Code	ECP Number	Costs/Savings Under Contract
(19) Subtotal ILS Costs/Savings			
d. Other Costs/Savings			

Clear Grids    Other Costs

Comments    Save Page 5

Close





# ELEMENTS OF A CHANGE PACKAGE

## Preparation & Justification - Hardware Milestones



ECP Pages

Distribution Statement Page 1 Page 2 Page 3 Page 4 Page 5 **Page 6** Page 7 Supplemental Information

ECP Numbe  53. CAGE Code:

Scanned

Manual

Enclosure

54. Configuration Item Nomenclature:

55. Title Of Change:

56. Date Authorization To Proceed Received By Contractor (YYYYMMDD):

S - Starting Delivery P - Progress Point C - Completed Delivery

NO. OF MONTHS -->	JAN	FEB	MAR	APR	MAY	JUN
a. Configuration Item						
(1) Production						
(2) Tech Manuals						
(3) Retrofit						
(4) MWD/TCTO/SC/ALT/TD						
(5) Spares/Repair Parts						
b. Support Equipment						







# ELEMENTS OF A CHANGE PACKAGE Preparation & Justification - Software Milestones



ECP Pages

Distribution Statement | Page 1 | Page 2 | Page 3 | Page 4 | Page 5 | Page 6 | **Page 7** | Supplemental Information

ECP Number:  57. CAGE Code:

Scanned  
 Manual  
 Enclosure

58. Computer Software Item Nomenclature:

59. Title Of Change:

60. Date Authorization To Proceed Received By Contractor (YYYYMMDD):   
S - Starting Delivery P - Progress Point C - Completed Delivery

NO. OF MONTHS -->	JAN	FEB	MAR	APR	MAY	JUN
a. Configuration Item						
(1) Software Engineering						
(2) Software Documentation						
(3) Software Replication						
(4) Software Distribution						
b. Support Equipment						
(1) Software Eng. Environment Upgrade						





# MEARS Review Document Repository

## Active and Inactive Documents



Open Document   Update User Info   Help

Program: TRAINING   Document Type: ECP

Active Documents   Inactive Documents

Document Number	CCB Date	Your Vote	Title
91TESTNORPR00A00	2004/04/17		nor 91 test
MI-C0812FR0A0	2003/03/06		M2770 - Revise Cables for Preparation Instructions an
MI-C0813FR0A0	2003/03/06		M2770 - Revise Cables for Preparation Instructions an
MI-C0814FR0A0	2003/10/15		M2770 - Revise Cables for Preparation Instructions an
NOR91TESTPR00A00	2004/04/17		asdf

Classification:   Type:   Form:

Open   View Status   Vote   NOR Status/Vote





# Evaluation and Coordination of an ECP Change Package via CCB Comments and Votes



MI-C0813FR0A0 - M2770 - Revise Cables for Preparation Instructions and Tolerances. - Microsoft Internet Explorer

Address: <https://mears1.redstone.army.mil/servlet/MEARSDynamicDocServlet?frameid=main&mode=review&dodcno=MI-C0813FR0A0>

### ECP Main Menu

**MI-C0813FR0A0**

- Distribution Statement
- [General ECP Information](#)
- Specifications Affected
- [Drawings/Documents Affected](#)
- [Contract Number and Line Item](#)
- Procuring Contracting Officer
- [Configuration Item Nomenclature](#)
- [Name of Part or Lowest Assembly Affected](#)
- [Description of Change](#)
- [Need for Change](#)
- [Production Effectivity by Serial Number](#)
- Retrofit Information
- Other Systems Affected
- Other Contractors/Activities Affected
- Configuration Items Affected
- Effects on Performance Allocations and Interfaces in System Specifications
- Effects on Employment, ILS, Training, Operational Effectiveness, or Software
- Effects on Configuration Item Specifications
- Developmental Requirements and Status
- Trade-Offs and Alternative Solutions

### General ECP Information

ECP Title: [M2770 - Revise Cables for Preparation Instructions and Tolerances.](#)

Date Submitted: [2003/02/14](#)

PAN: [MI-C0813](#)                      DODAAC:

Originator: [LTV AEROSPACE AND DEFENSE COMPANY, LTV MISSIL, P.O. BOX 650003, DALLAS, TX 75265-0003](#)

ECP CLASS	J-CODE	PRIORITY	MODEL/TYPE
I	C	U	MODEL
CAGE	SYSTEM	CONFIG TYPE	
64059	TRAINING	-	
ECP NO	TYPE	REVISION	AMENDMENT
MI-C0813	F	R0	A0

Baseline Affected:

Total Number of Change Documents Attached to this Document: [N/A](#)

Functional: [N](#)                      Allocated: [N](#)                      Product: [Y](#)

Frame Comments     Appended Comments    
 Summary Comments     All My Comments

Done                      Unknown Zone (Mixed)





# ECP Status & Disposition



**MEARS Status**

Program: TRAINING Form: ECP: 480/973

Document Number: MI-C0813FRQ40 Classification: I Type: F

Title: M2770 - Revise Cables for Preparation Instructions and Tolerances.

Milestones	Milestone Dates
Submission Date	2003/02/14
CCB Date	2003/03/06
Comments Due By Date	2003/03/03
Approval Authority	Disposition

CCB Members	Name	Submitted Comments	Vote	Concurs In Classification	Opened
approve	PROJECT OFFICE	No			No
betatest1	Beta Test	Yes	Approve	No	Yes
beth	Beth Hurter	Yes			Yes
bjwiley	Captain Dixie	No			Yes
burdefay	Faye Burdett	No			Yes
clarkjs	Cpl Joseph S. Clark	No			No
dgafford	Douglas Gafford	No			Yes
knapp-s	Sue Knapp	No			Yes
testuser	Test User	No			No
training1	User	No			No
tward	Tara Collier	No			Yes
user1	User 1	Yes	Disapprove	No	Yes
user10	User 10	Yes	Approve	Yes	Yes
user11	user11	Yes	Disapprove	No	Yes

View All Comments View User Comments View User Info Print Close



## Document Status Report

Program: TRAINING Doc Status: Active Doc Type: All Disposition: All

	Doc. Number	Title	Class	CCB Date	Document Status	Form Type	Disposition Date	Disposition	Dispositioned By
1	91TESTNORPR00A00	nor 91 test	II	20040417	Active	ECP			
2	eliztestnorPR00A00	ttt	II	20040322	Active	ECP			
3	MI-C0812FR0A0	M2770 - Revise Cables for Preparation Instructions and Tolerences.	I	20030306	Active	ECP	2003/02/20	Approved	Captain Dixie
4	MI-C0813FR0A0	M2770 - Revise Cables for Preparation Instructions and Tolerences.	I	20030306	Active	ECP			
5	MI-C0814FR0A0	M2770 - Revise Cables for Preparation Instructions and Tolerences.	I	20031015	Active	ECP			
6	NOR91TESTPR00A00	asdf	II	20040417	Active	ECP			