

## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

05 - System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604012F Joint Helmet Mounted Cueing System  
(JHMCS)

PROJECT

4789

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4789 Joint Helmet Mounted Cueing System (JHMCS)	5,530	1,839	843	2,875	2,904	2,945	3,006	2,989	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

This joint Air Force/Navy program (Air Force is the lead service) develops a helmet display system capable of depicting aircraft heading data, pilot's viewing perspective, target indication tracking/cueing, and other information on the aircrew visor to enhance pilot situational awareness. This display allows the pilot to quickly align platform sensors and weapons on targets, and engage threats using high off-boresight (HOBS) weapons such as the AIM-9X.

Status: A program restructure was approved in Dec 99 to extend the Engineering and Manufacturing Development (EMD) contract and allow for redesign of the Helmet Vehicle Interface (HVI) cable to improve reliability, software upgrades to improve built-in test, and maturation of HOBS cueing capability with the AIM-9X. A second Low Rate Initial Production (LRIP) was added in FY01 with the Milestone III production decision moved from Sep 00 to Aug 02. A third LRIP was added in FY02 to accelerate the fielding of helmets to meet warfighter requirements. Completion of FY02 activities include Multi-Service Operational Test and Evaluation (MOT&E) in Sep 02. The system was rated Operationally Effective, Operationally Not Suitable. Delay in completing MOT&E was due to combat configuration changes. MS III was again rescheduled until 3QtrFY03 to facilitate Verification of Correction of Deficiencies (VCD) identified in Operational Test (OT). Continued activities include Electronic Unit Software update, helmet fit process improvements, regression testing, preparation for MS III (full rate production), a night display and tracking/cueing study, and an improved magnetic mapping processes study effort to reduce the life cycle costs of deployed aircraft. Developmental Test (DT)/OT indicated tremendous potential to enhance air/ground capability and multi-aircraft data fusion through future software upgrades.

(U) FY 2002 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$1,800	Continue EMD contract to include software development to support airframe requirements and complete logistics activities
(U) \$3,262	Begin to resolve OT deficiencies: pilot fitting, visor options, mapping and tracking improvements, Reliability and Maintainability (R&M) study
(U) \$468	Continue Program Management Support
(U) \$5,530	Total

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**4789**(U) **A. Mission Description Continued**(U) FY 2003 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program

(U) \$699 Continue OT deficiencies resolution, reliability improvement program, and begin P3I activities

(U) \$700 Begin S/W upgrades for A/G enhancements and data fusion

(U) \$440 Continue Program Management Support

(U) \$1,839 Total

(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program

(U) \$527 Continue software upgrades (EU 7.0) to support enhanced A/G and data fusion

(U) \$316 Continue Program Management Support

(U) \$843 Total

(U) **B. Budget Activity Justification**

This program is in budget activity 5 - SDD, because of the development nature of this program.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	5,901	1,859	861	TBD
(U) Appropriated Value	5,960	1,859		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-59	-20		
b. Small Business Innovative Research	-192			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-152			
e. Rescissions	-27			
(U) Adjustments to Budget Years Since FY 2003 PBR			-18	
(U) Current Budget Submit/FY 2004 PBR	5,530	1,839	843	TBD

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(U) C. Program Change Summary (\$ in Thousands) Continued(U) Significant Program Changes:

## General:

An LRIP 3 was added by AFPEO/FB in Feb 02 to expedite delivery to meet warfighter requirements. The program was approved to start operational test and evaluation in Jun 01 and finished in Jun 02 -- The Multi-Service Operational Test and Evaluation (MOT&E) report stated system Operationally Effective, Operationally Not Suitable. Production readiness in support of full-rate production (FRP) will occur after MS III approval. The MS III decision was moved to 3rdQtrFY03 to facilitate VCDs identified in OT, to include; upper HVI cable, cracked visors, laser eye protection, Navy flight gear, training, publications, mapper tech orders, and mapper software.

## Schedule:

The following schedule milestones are based on the approved restructure: AFPEO/FB approved the program to enter LRIP 2 in May 01 and to start OT&E in Jun 01; LRIP 2 contract award Aug 01; LRIP 3 contract award Nov 02; MS III decision in 3rdQtrFY03; FRP contract award in 3rdQtrFY03 and Air Force RAA in 4thQtrFY03.

(U) D. Other Program Funding Summary (\$ in Thousands)

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	

(U) RDT&E, BA 5, PE 0604201F, Integrated Avionics Planning and Development										45,151
Note: Prior to FY01 JHMCS was funded as part of PE 0604201F.										

(U) E. Acquisition Strategy

JHMCS is an ACAT III joint USAF/USN program (USAF - executive service). The development contract structure is a Cost Plus Award Fee (CPAF). The CPAF contract is through Boeing - St. Louis for development and integration into the F-15 and F/A-18 aircraft. All other aircraft integration will be handled by the respective platform prime contractors. Boeing has subcontracted to Vision Systems International (VSI) to provide JHMCS subsystems hardware/software. VSI is a partnership between Elbit (an Israeli company with U.S offices in Ft Worth, TX) and Kaiser Electronics. The Joint Program Office is using a unique approach of developing common hardware as Government Furnished Equipment (GFE) to minimize platform integration risk. The results of this approach allows for substantial hardware commonality and 100% software commonality on all aircraft. Furthermore, lessons learned from each aircraft integration is directly transferable to all aircraft. The program received approval to restructure in FY00, extending the EMD contract to allow resolution of deficiencies including poor reliability of the HVI cable and

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(U) **E. Acquisition Strategy Continued**

software enhancements to improve HOBBS cueing. The restructure added a second LRIP in FY01 and delayed Milestone III from Sep 00 until Aug 02. MS III was subsequently moved to 3rdQtrFY03 to facilitate VCDs identified in OT. The revised schedule better synchronizes JHMCS with the parallel developed AIM-9X missile. Additionally, a third LRIP was approved to accelerate the fielding of helmets to meet warfighter requirements.

(U) **F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Navy OPEVAL - Starts	*											
(U) LRIP 3 Production Decision (AFPEO/FB)	*											
(U) IOT&E/OPEVAL - Report				*								
(U) LRIP 3 Contract Award					*							
(U) Full Rate Production (FRP) decision (MSIII)							X					
(U) FRP 1 Contract Award							X					
(U) F-15 Required Assets Available (RAA)								X				
(U) E.U. 7.0 Software Contract Award								X				
(U) E.U. 7.0 System Integration Lab (SIL) Test										X		
(U) E.U. 7.0 Flt Test Support on F-15, F-16, F-18												X
X - Planned event												
* - Completed event												

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## RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE

February 2003

## BUDGET ACTIVITY

05 - System Development and Demonstration (SDD)

## PE NUMBER AND TITLE

0604012F Joint Helmet Mounted Cueing System  
(JHMCS)

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(U) A. Project Cost Breakdown (\$ in Thousands)

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Project Cost Categories			
(U) Logistics Support/F-16 Software	1,800	0	0
(U) OT Correction, Pilot Firing and R&M, P3I activities	3,262	699	0
(U) S/W Upgrades for A/G and Data Fusion	0	700	527
(U) Program Management	468	440	316
(U) Total	5,530	1,839	843

(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)(U) Performing Organizations:

<u>Contractor or</u> <u>Government</u> <u>Performing</u> <u>Activity</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Performing</u> <u>Activity</u> <u>EAC</u>	<u>Project</u> <u>Office</u> <u>EAC</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Organizations</u>										
Boeing Company	CPAF	2/97	0	0	15,622	5,062	1,399	527	Continuing	TBD
<u>Support and Management Organizations</u>										
Various	Various	2/97	0	0	501	468	440	316	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
Various	Various	2/97	0	0	588	0	0	0	0	588

(U) Government Furnished Property:

<u>Item</u> <u>Description</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									

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Exhibit R-3 (PE 0604012F)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
05 - System Development and Demonstration (SDD)		0604012F Joint Helmet Mounted Cueing System (JHMCS)			4789	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
Subtotal Product Development		15,622	5,062	1,399	527	TBD
Subtotal Support and Management		501	468	440	316	TBD
Subtotal Test and Evaluation		588	0	0	0	0
Total Project		16,711	5,530	1,839	843	TBD

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