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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604012F Joint Helmet Mounted Cueing System (JHMCS)				PROJECT 4789			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4789	Joint Helmet Mounted Cueing System (JHMCS)	1,439	5,901	1,859	861	2,919	2,976	3,023	Continuing	TBD	
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	
<p>Prior to FY00 JHMCS was funded as part of PE 64201F (Integrated Avionics Planning and Development).</p> <p>(U) <u>A. Mission Description</u> 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 flight information on the aircrew visor to enhance overall pilot situational awareness. Displaying this information allows the pilot to quickly align sensors and weapons on targets and engage threats using high off-boresight weapons such as the AIM-9X. A program restructure was approved in Dec 99 to extend the 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 high off-boresight (HOBS) cueing capability with the AIM-9X. The approved restructure added a second LRIP in FY01 and delayed the Milestone III Production Decision from Sep 00 to Aug 02. A third LRIP was added in FY02 by direction of AFPEO/FB to accelerate the fielding of helmets to meet warfighter requirements. Additional FY02 activities include an Electronics Unit software update, helmet fit process improvements, regression testing, preparation for Milestone 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.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$767 Continued JHMCS Engineering and Manufacturing Development (EMD) Contract (U) \$672 Continued Program Management Support (U) \$1,439 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$1,800 Continue EMD contract to include correction of deficiencies found in OT, and EMD contract completion activities (U) \$3,633 Continue Night Vision (NV) study efforts, resolve OT deficiencies, and begin NV and adaptive mapping/tracking study implementation (U) \$468 Continue Program Management Support (U) \$5,901 Total</p>											
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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">(U) \$1,419</td> <td>Continue NV implementation and Operational Test deficiencies resolution, and begin P3I activities</td> </tr> <tr> <td>(U) \$440</td> <td>Continue Program Management Support</td> </tr> <tr> <td>(U) \$1,859</td> <td>Total</td> </tr> </table> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program is in budget activity 5 - EMD, Phase II, Research Category 6.4 because of the development nature of this program.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 55%;"></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">1,300</td> <td style="text-align: center;">5,960</td> <td style="text-align: center;">1,957</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">1,312</td> <td style="text-align: center;">5,960</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: center;">-9</td> <td style="text-align: center;">-59</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: center;">-45</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: center;">184</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: center;">-3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">-98</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">1,439</td> <td style="text-align: center;">5,901</td> <td style="text-align: center;">1,859</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p> <p>General:</p> <p>The Air Force and Navy PEOs approved the JHMCS program restructure plan in Dec 99. The restructure extended the EMD contract to improve HVI reliability and mature HOBS performance, added a second LRIP in FY01, and delayed the MSIII decision until late FY02. Production readiness in support of FRP will now occur in FY02. All HOBS cueing concerns were resolved during FY00. FY01 resolved the following R&M issues: canopy scratching, magnetic mapper ruggedness and open logistics documentation. JHMCS now consistently provides HOBS cueing to the limits of the AIM-9X, and DT/OT pilots now rate performance as 'excellent.' The Navy PEO approved the program for LRIP in May 00 for the F/A-18E/F. Both PEOs approved the program for its second LRIP in May 01 to procure units for the</p>			(U) \$1,419	Continue NV implementation and Operational Test deficiencies resolution, and begin P3I activities	(U) \$440	Continue Program Management Support	(U) \$1,859	Total		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	1,300	5,960	1,957	TBD	(U) Appropriated Value	1,312	5,960			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-9	-59			b. Small Business Innovative Research	-45				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	184				e. Rescissions	-3				(U) Adjustments to Budget Years Since FY 2002 PBR	0		-98		(U) Current Budget Submit/FY 2003 PBR	1,439	5,901	1,859	TBD
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<p>(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u></p> <p>(U) <u>Significant Program Changes Continued:</u> F-15, F-16, and F/A-18E/F. The program was approved to start operational test and evaluation in Jun 01 and finished in early FY02. LRIP 3 was added to expedite delivery to meet warfighter requirements. FY2003 \$98K reduction due to reduction in program support.</p> <p>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 4QFY01; MSIII decision in 4QFY02 and Air Force RAA in 4QFY03.</p> <p>(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%; text-align: center;"><u>FY 2001</u></th> <th style="width:10%; text-align: center;"><u>FY 2002</u></th> <th style="width:10%; text-align: center;"><u>FY 2003</u></th> <th style="width:10%; text-align: center;"><u>FY 2004</u></th> <th style="width:10%; text-align: center;"><u>FY 2005</u></th> <th style="width:10%; text-align: center;"><u>FY 2006</u></th> <th style="width:10%; text-align: center;"><u>FY 2007</u></th> <th style="width:10%; text-align: center;"><u>Cost to</u></th> <th style="width:10%; text-align: center;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) RDT&E, BA 5, PE 0604201F, Integrated Avionics Planning and Development Note: Prior to FY01 JHMCS was funded as part of PE 0604201F.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">45,151</td> </tr> </tbody> </table> <p>(U) <u>E. Acquisition Strategy</u> JHMCS is an ACAT III joint USAF/USN program (USAF - executive service). The contract structure is a Cost Plus Award Fee (CPAF). The CPAF contract is through Boeing - St. Louis for integration into the F-15 and F/A-18 aircraft. All other aircraft integration will be handled by the respective platform Prime Contractor. Boeing has subcontracted to Vision Systems International (VSI) to provide JHMCS subsystems hardware/software. VSI is a partnership between Elbit (an Israeli company based 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 software enhancements to improve high off boresight cueing. The restructure added a second LRIP in FY01 and delayed Milestone III from Sep 00 until Aug 02. The revised schedule better synchronizes JHMCS with the parallel developed AIM-9X missile. Additionally, the PEO approved a third LRIP to accelerate the fielding of helmets to meet warfighter requirements.</p>										<u>FY 2001</u>	<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>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>Complete</u>		(U) RDT&E, BA 5, PE 0604201F, Integrated Avionics Planning and Development Note: Prior to FY01 JHMCS was funded as part of PE 0604201F.									45,151
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(U) F. Schedule Profile													
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) LRIP 2 Production Decision (AFPEO/FB)			*										
(U) Air Force IOT&E - Starts			*										
(U) LRIP 2 Contract Award				*									
(U) Navy OPEVAL - Starts					*								
(U) LRIP 3 Production Decision (AFPEO/FB)					*								
(U) IOT&E/OPEVAL - Completes						X							
(U) LRIP 3 Contract Award							X						
(U) Full Rate Production Decision (MSIII)								X					
(U) F-15 RAA - 4th Qtr FY03												X	
X - Planned event													
* - Completed event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
05 - Engineering and Manufacturing Development				0604012F Joint Helmet Mounted Cueing System (JHMCS)				4789			
(U) A. Project Cost Breakdown (\$ in Thousands)											
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>	
(U)	Project Cost Categories										
(U)	EMD				767		5,433			1,419	
(U)	Flight Test Support (AFFTC)				0		0			0	
(U)	Program Management				672		468			440	
(U)	Total				1,439		5,901			1,859	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Boeing Company	CPAF	2/97	0	0	15,622	767	5,433	1,419	Continuing	TBD
<u>Support and Management Organizations</u>											
	Various	Various	2/97	0	0	501	672	468	440	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	Various	Various	2/97	0	0	588	0	0	0		588
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>											
<u>Support and Management Property</u>											
<u>Test and Evaluation Property</u>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2002	
BUDGET ACTIVITY	PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development	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>Total</u>
<u>Subtotals</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	15,622	767	5,433	1,419	TBD	TBD
Subtotal Support and Management	501	672	468	440	TBD	TBD
Subtotal Test and Evaluation	588	0	0	0	0	588
Total Project	16,711	1,439	5,901	1,859	TBD	TBD