

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	67931	53592	13961	113223	51717	18332	33526	31163	□	594656
114 TACTICAL UNMANNED AERIAL VEHICLE (TUAV) (JMIP)	20206	22527	20191	13858	8896	9098	8728	8988	0	160993
11A ADVANCED PAYLOAD DEVELOP & SPT (JMIP)	17242	20008	9688	1221	1222	1222	16286	13425	0	98201
11B TSP DEVELOPMENT (JMIP)	5650	8822	12423	7239	0	0	0	0	0	34134
123 JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (JMIP)	2210	2235	2351	2401	2228	2325	2443	2496	0	20803
D09 EXTENDED RANGE UAV (JMIP)	22623	0	94957	88504	39371	5687	6069	6254	0	280525

**A. Mission Description and Budget Item Justification:** The Tactical Unmanned Aerial Vehicle (TUAV) provides the Army with dedicated day/night reconnaissance, surveillance and target acquisition (RSTA) and intelligence. TUAV provides the tactical warfighting commander with critical battlefield information in the rapid cycle time required for success at the tactical level. The TUAV system consists of multiple air vehicles, each configured with an electro-optic (EO)/infrared (IR) sensor payload, ground control equipment (including communications equipment, launch and recovery equipment), remote video terminal, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is supported by a Maintenance Section-Multifunctional (MSM). Each division is supported by a Mobile Maintenance Facility (MMF). Near term RDT&E includes C4I interoperability and testing, BIT/BITE integration and testing, and initiation of a Small UAV Program. The Shadow UAV system has proven itself under combat conditions while deployed in support of OIF. Continued fielding and war time lessons learned have identified critical areas for improvement. These areas include enhanced C4I, survivability enhancement (noise and signature reduction), Automatic landing system enhancements, software optimization including increased Joint Technical Architecture - Army (JTA-A) compliance, and reduction of Total Ownership Cost through design enhancements. Future initiatives will focus on the transition of technologies that directly support the Army's Future Force, such as counter camouflage, and other specialty payloads as appropriate. The Advanced Payload Development & Support efforts will establish the infrastructure to evaluate the maturity of the technology efforts and transition an employable TUAV capability. Development and fielding of the TRADOC System Manager (TSM) UAV's top 5 priorities include Synthetic Aperture Radar/Moving Target Indicator, Communication Relay Payload, Laser Designation, and Objective EO/IR. The Joint Technology Center/System Integration Lab (JTC/SIL) is a joint integration center that develops the Multiple Unified Simulation Environment (MUSE), which provides simulations of tactical UAVs and strategic Intelligence, Surveillance and Reconnaissance (ISR) assets. The simulation is used with a broad range of joint systems, including the Army Tactical Exploitation Station, the Navy Joint Fires Network, and the Air Force ISR-Manager and Distributed Common Ground Station. The MUSE provides for the development of real-time interoperable hardware and operator-in-the-loop simulations of multiple intelligence systems, and is routinely employed in warfighter exercises throughout the world.

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<u><b>B. Program Change Summary</b></u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	45627	30113	47627
Current Budget (FY 2006/2007 PB)	53592	139610	113223
Total Adjustments	7965	109497	65596
Net of Program/Database Changes			
Congressional Program Reductions	-785		
Congressional Rescissions			
Congressional Increases	8750		
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		109497	65596

FY 06: \$94.957M was added for ER/MP program (Project D09), 3.151K was decreased for project 114.  
 FY 07: \$59.927M was added for ER/MP program for project D09, \$239K was increased on project 114.

## Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY

**7 - Operational system development**

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**0305204A - Tactical Unmanned Aerial Vehicles**

PROJECT

**0305204A**

**Schedule Detail:** Not applicable for this item.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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**PROJECT**  
**114**

COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate								
114 TACTICAL UNMANNED AERIAL VEHICLE (TUAV) (JMIP)	20206	22527	20191	13858	8896	9098	8728	8988	0	160993

**A. Mission Description and Budget Item Justification:** The Tactical Unmanned Aerial Vehicle (TUAV), provides the Army with dedicated day/night reconnaissance, surveillance and target acquisition (RSTA) and intelligence. TUAV provides the tactical warfighting commander with critical battlefield information in the rapid cycle time required for success at the tactical level. The TUAV system consists of multiple air vehicles, each configured with an electro-optic (EO)/infrared (IR) sensor payload, ground control equipment, (including communications equipment, and launch and recovery equipment), remote video terminal, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is supported by a Maintenance Section-Multifunctional. Each divisional is supported by a Mobile Maintenance Facility. RDT&E activities include Army System Acquisition Review Council (ASARC) approved path forward to include C4I interoperability and test, and BIT/BITE.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Program Management Support	1388	2009	1800	1100
Development Testing / Risk Reduction Testing / ST&E	690	600	0	0
Target Location Error (TLE) / Digital Data Link development efforts, Tactical Common Data Link (TCDL) and Joint Tactical Radio System (JTRS) / Laser Designator	4700	5350	9000	0
C4I Maintenance / Improvements (ABCS 4.3, 6.2, ...)	1000	1000	1000	1000
OIF Reliability Upgrade	4100	0	0	0
OIF Improvements	928	2000	3000	3000
Airframe Optimization	5300	0	0	0
System Automation Improvement	0	0	1000	0
TLE Inertial Measurement Unit (IMU)	0	0	0	5000
Small Platform Modern Communications Intelligence Project 11B)	0	6650	0	0
I-GNAT	0	2100	0	0
OIF Reliability Upgrade	2100	0	0	0
OIF Improvements	0	2818	4391	3758
<b>Totals</b>	<b>20206</b>	<b>22527</b>	<b>20191</b>	<b>13858</b>

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<b>B. Other Program Funding Summary</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
TUAV Procurement (BA0330)	121616	131471	26000	36169	42774	101356	129056	27611	Continuing	Continuing
Initial Spares - TUAV (BS9738)	14463	9783	0	0	0	0	0	0	Continuing	Continuing
TUAV - Extended Range/ Multi-purpose (B00305)	0	0	0	32890	100380	155839	163742	167013	Continuing	Continuing
Small UAV (SUAV) - (B00303)	0	0	20000	20492	20518	20539	10794	0	0	92343
RAVEN - (M80101)	109868	13458	0	0	0	0	0	0	0	123326
Extended Range / Multi-purpose - Weapons Capability Modifications (B10307)	0	0	0	14959	14978	14993	15008	15024	0	74962

**C. Acquisition Strategy:** A System Capability Demonstration (SCD) was conducted with four contractors. The results from the SCD in conjunction with proposal evaluations resulted in the competitive down select of a Best Value TUAV system. A successful Milestone II ASARC was conducted on 21 December 1999, and a TUAV LRIP contract was awarded to the AAI Corporation on 27 December 1999. In order to accelerate fielding of the TUAV system, a second LRIP for four systems was awarded on 3 March 2001 following a successful OPTEMPO test. In order to maintain accelerated fielding and continue ramp up to full rate production, a third LRIP was awarded in March 2002. A successful LRIP program led to a MS III decision on 25 September 2002 and award of a full rate production contract on 27 December 2002. Continued development of the selected TUAV system will be accomplished through a series of upgrades to incorporate improvements such as extended range and endurance, increased payload weight space and power capability, Tactical Common Data Link and advanced sensor payloads as they mature and are operationally proven.

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

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**PROJECT**  
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TUAV LRIP Program	Comp / FPIF	AAI Corporation, MD	63965	0		0		0		0	63965	63676
b . C4I Maintenance / Improvements	MIPR / PWD	Various	1000	1000	1-3Q	1000	1-3Q	1000	1-3Q	0	4000	0
c . TAFT System Support	CPFF	AAI Corporation, MD	3375	0		0		0		0	3375	0
d . Ground Control Station and Trailers	CPFF	AAI Corporation, MD & Northrop Grumman, CA	11808	0		0		0		0	11808	0
e . I-GNAT	CPFF	General Atomics	9709	2100	2Q	0		0		0	11809	0
f . Government Furnished Equipment	MIPR	Various	2036	0		0		0		0	2036	2036
g . SIL/MUSE	MIPR	Sys Integration Lab, AMCOM Redstone, AL	1500	0		0		0		0	1500	1500
h . Tactical Control System	PWD	AMCOM RDEC Redstone, AL	700	0		0		0		0	700	700
i . Advanced Payload Development/Modification/Integration	MIPR	PM UAV Payloads, Huntsville, AL	4118	0		0		0		0	4118	4118
j . Institutional Mission Simulator	MIPR	Sys Integration Lab, AMCOM Redstone, AL	2910	0		0		0		0	2910	2910

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I. Product Development (Continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
k . Objective Capability Assessment/Development / C4I	Comp/FPIF	AAI Corporation, MD	3044	0		0		0		Continue	Continue	Continue
l . Improved EO/IR Payload Modification/Integration Assessment for Demo on Hunter	Comp/Opt	AMCOM RDEC Redstone, AL	200	0		0		0		0	200	200
m . TUAV Ground Control Station Architecture	MIPR	Sys Integration Lab, AMCOM Redstone, AL	7275	0		0		0		0	7275	7275
n . Outrider Advance Concept Technology Demonstration Bridge Contract	SS/FPIF	Alliant Techsystems, Hopkins, MN	10600	0		0		0		0	10600	10600
o . TUAV Source Selection/System Capabilities Demo	MIPR/PWD	Various	7200	0		0		0		0	7200	7200
p . Target Location Error (TLE) / Digital Data Link, TCDL/JTRS / Laser Designator	CPFF	AAI Corporation, MD	15042	5350	2-3Q	9000	1-2Q	0		0	29392	0
q . Army Apache/UAV Interoperability Demonstration	MIPR	AMCOM RDEC Redstone, AL	350	0		0		0		0	350	350

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I. Product Development (Continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
r . Corrective Actions/Engineering Support	CPFF / PWD	AAI Corporation, MD	10375	0		0		0		0	10375	7714
s . Hunter UAV non-recurring support	SS/FPIF	TRW, Sierra Vista, AZ	4140	0		0		0		0	4140	4140
t . Hardware cost for GCS's (2) to be integrated into the selected AV's for the ER req.	CPFF	Northrop Grumman, CA	2000	0		0		0		0	2000	0
u . OIF Reliability Upgrade	CPFF / PWD	AAI Corporation, MD	4100	0		0		0		0	4100	0
v . OIF Reliability Upgrade	CPFF / PWD	AAI Corporation, MD	2100	0		0		0		0	2100	0
w . OIF Improvements	CPFF / PWD	AAI Corporation, MD	928	2000	1-2Q	3000	1-2Q	3000	1-2Q	0	8928	0
x . OIF Improvements	CPFF / PWD	AAI Corporation, MD	0	2818	1-2Q	4391	1-2Q	3758	1-2Q	0	10967	0
y . Airframe Optimization	CPFF / PWD	AAI Corporation, MD	5300	0		0		0		0	5300	0

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I. Product Development (Continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
z. System Automation Improvement	CPFF / PWD	AAI Corporation, MD	0	0		1000	1-2Q	0		0	1000	0
aa. TLE Inertial Measurement Unit (IMU)	CPFF / PWD	AAI Corporation, MD	0	0		0		5000	1-3Q	0	5000	0
bb. Small Platform Modern Communications Intelligence	Unknown	TSP	0	6650	2Q	0		0		0	6650	0
<b>Subtotal:</b>			173775	19918		18391		12758		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Contractor Engineering Support	CPFF	Various	8000	601	1-2Q	750	1Q	400	1Q	Continue	9751	Continue
b. Government Engineering Support	PWD	AMCOM Redstone, AL	4904	865	1Q	550	1Q	350	1Q	Continue	6669	Continue
c. Contractor Engineering Support - Extended Range	CPFF	Various	2124	0		0		0		0	2124	0

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
d . Government Engineering Support - Extended Range	PWD	AMCOM Redstone, AL	1476	0		0		0		0	1476	0
Subtotal:			16504	1466		1300		750		Continue	20020	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Risk Reduction Testing/ST&E	MIPR	Various	14221	600	1-2Q	0		0		0	14821	13531
b . Development Testing/ OPTEMPO Testing / Risk Reduction Testing / ST&E	MIPR	Various	4354	0		0		0		Continue	4354	Continue
c . C4I Testing	MIPR	Various	1980	0		0		0		0	1980	1980
d . OPTEMPO Demo	MIPR	Various	1000	0		0		0		0	1000	1000
e . Data Acquisition System (DAS) Instrumentation Van	MIPR	Redstone Technical Test Center, AL	810	0		0		0		0	810	810
f . IOT&E Preparation and Support/Travel	MIPR	ATEC/PM/OGA Ft. Hood, TX	750	0		0		0		0	750	750

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III. Test and Evaluation (Continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
			23115	600		0		0		Continue	23715	Continue
<b>Subtotal:</b>												

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Mgt Personnel	MIPR	PM UAVS Redstone, AL	7323	543	1-4Q	500	1-4Q	350	1-4Q	Continue	8716	Continue
<b>Subtotal:</b>			7323	543		500		350		Continue	8716	Continue

<b>Project Total Cost:</b>			220717	22527		20191		13858		Continue	Continue	Continue
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# Schedule Profile (R4 Exhibit)

February 2005

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Production (Sys/Att. AV's)	[Redacted]																															
OIF	[Redacted]																															
C4I Maintenance/Improvements	[Redacted]																															
Development Testing	[Redacted]																															
Total Ownership Cost Reduction Initiatives	[Redacted]																															
P3I	[Redacted]																															

## Schedule Detail (R4a Exhibit)

**February 2005**

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
OPTEMPO Demonstration								
Special In-Process Review / LRIP II/ III Decision								
IOT&E Preparation and IOT&E								
Field IOT&E LRIP System to IOT&E User								
Milestone III / Production Decision								
Award Full Rate Production								
C4I Maintenance/ Improvements (ABCS 4.3, 6.2, .....)	1-4Q							
Development Testing / Risk Reduction Testing / ST&E	1-3Q	1-3Q	1-3Q	1-3Q	1-2Q	1-2Q	1-2Q	1-2Q
TLE / TCDL / JTRS / Laser Designator	2-3Q	1-3Q	1-3Q	1-3Q				
Airframe Optimization	2Q							
System Automation Improvement			1-2Q	1-2Q	1-2Q	1-2Q	1-2Q	1-2Q
Total Ownership Cost Reduction Initiative					1-3Q	1-3Q	1-3Q	1-3Q
P3I					1-2Q	1-2Q	1-2Q	1-2Q
OIF Reliability Upgrade	2Q							
OIF Reliability Upgrade	2Q							
OIF Improvements	1-2Q	1-2Q	1-2Q	1-2Q				
OIF Improvements		1-3Q	1-3Q	1-3Q				
Airframe Optimization	1-3Q							
I-GNAT		2Q						
System Automation Improvement			1-2Q					
TLE Inertial Measurement Unit (IMU)				1-2Q				

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BUDGET ACTIVITY <b>7 - Operational system development</b>				PE NUMBER AND TITLE <b>0305204A - Tactical Unmanned Aerial Vehicles</b>				PROJECT <b>11A</b>		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
11A    ADVANCED PAYLOAD DEVELOP & SPT (JMIP)	17242	20008	9688	1221	1222	1222	16286	13425	0	98201

**A. Mission Description and Budget Item Justification:** This project supports the Army's transformation by developing payloads for the Unit of Action (UA) Unmanned Air Vehicles (UAV) in accordance with HQDA and TRADOC UAV priorities. The Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) payload will provide a wide-area search capability with a built-in imaging mode that provides essential all-weather surveillance and increased situational awareness. The SAR/GMTI payload is a complementary system of the Army's Future Combat System (FCS) and is a principal payload for the Extended Range/Multi-Purpose (ER/MP) UAV. The ER/MP Electro Optical Infra Red w/Laser Designator (EO/IR/LD) will provide a day/night capability to collect and display continuous imagery with the ability to designate targets of interest for attack by laser guided precision weapons. Future initiatives will continue to focus on the transition of technologies directly supporting emerging UAV requirements and the Army's Future Force. The Light Detection and Ranging (LIDAR) payload provides high-resolution elevation data for detailed mapping. Funding provides for up to four LIDAR prototype payloads to be downsized for demonstration on the Hunter UAV.

FY2006/2007 funding continues the development of EO/IR/LD and SAR/GMTI systems integration.

<b>Accomplishments/Planned Program</b>	FY 2004	FY 2005	FY 2006	FY 2007
SAR/GMTI Development and Integration - includes Development Test.	15419	8473	2552	610
EO/IR/LD development.	0	11535	7136	611
LIDAR sensor package development efforts	1823	0	0	0
<b>Totals</b>	<b>17242</b>	<b>20008</b>	<b>9688</b>	<b>1221</b>

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PROJECT  
**11A**

<b>B. Other Program Funding Summary</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Advanced TUAV Payloads (B00302)	0	0	0	36093	38833	20191	25699	33958	129000	283774

**C. Acquisition Strategy:** The System Development and Demonstration (SDD) contract for the SAR/GMTI Payload was competitively awarded 1QFY04 for the design/modification and fabrication of SDD articles. The SAR/GMTI SDD articles will be refurbished and provided to FCS for integration and testing and participation in FCS Limited User Test (LUT). Additional capabilities will be added via spiral development depending on need and technology maturity. An additional six (6) units will be procured under the existing contract to support ER/MP system integration and test.

The SDD contract for the ER/MP EO/IR/LD will be competitively awarded in 3rd quarter FY05 for up to 1 test articles. Upon completion of development testing, the SDD articles will be provided to the ER/MP program for system integration and test. After the ER/MP Limited User Test, the SDD units will be refurbished and used to support the platform during IOT&E.

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**PROJECT**  
**11A**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SAR/GMTI System Development & Demonstration	COMP/CPI F	General Atomics, San Diego, CA	22519	6000	2Q	0		0		0	28519	22596
b . EO/IR/LD SDD Development	COMP/FFP/CPFF	TBS	0	10000	3Q	5718	1-2Q	0		0	15718	15718
c . LIDAR sensor package development efforts			1823	0		0		0		0	1823	0
Subtotal:			24342	16000		5718		0		0	46060	38314

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Support	MIPR	Various	5097	2592	1-4Q	1162	1-4Q	771	1-4Q	Continue	9622	Continue
Subtotal:			5097	2592		1162		771		Continue	9622	Continue

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**PROJECT**  
**11A**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SAR/GMTI Payload Test Support	MIPR	DTC, Aberdeen Proving Grounds, MD	70	600	1-4Q	0		0		Continue	670	670
b . SAR/GMTI Operational Testing	MIPR	IEWTD, Fort Huachuca, AZ	0	341	1-4Q	1758	1-2Q	0		0	2099	2098
c . EO/IR/LD Developmental Testing	MIPR	DTC, Aberdeen Proving Grounds, MD	0	0		600	2-3Q	0		0	600	600
<b>Subtotal:</b>			70	941		2358		0		Continue	3369	3368

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Mgt Personnel	In House	PM RUS, Ft. Monmouth, NJ	927	475	1-4Q	450	1-4Q	450	1-4Q	Continue	2302	Continue
<b>Subtotal:</b>			927	475		450		450		Continue	2302	Continue

<b>Project Total Cost:</b>			30436	20008		9688		1221		Continue	61353	Continue
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# Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY  
**7 - Operational system development**

PE NUMBER AND TITLE  
**0305204A - Tactical Unmanned Aerial Vehicles**

PROJECT  
**11A**

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) SAR/GMTI MS B	▲1																															
SAR/GMTI SDD	█																															
SAR/GMTI DT																																
SAR/GMTI OTE																																
UAV Systems Integration & Test Support for SAR/GMTI																																
(2) SAR/GMTI MS C																																
(3) Award SAR/GMTI FRP																																
(4) ER/MP EO/IR/LD Acquisition Strategy Review																																
(5) ER/MP EO/IR/LD MS B																																
EO/IR/LD SDD																																
(6) ER/MP EO/IR/LD SDD Contract Award																																
(□) EO/IR/LD MS C																																

## Schedule Detail (R4a Exhibit)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**11A**

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B for SAR/GMTI	1Q							
SAR/GMTI System Development and Demonstration (SDD) Contract	1-4Q	1-4Q	1-4Q					
SAR/GMTI DT		3-4Q	1Q					
SAR/GMTI OTE			2Q					
UAV Systems Integration & Test Support			2-4Q	1-4Q	1Q			
MS C for SAR/GMTI			4Q					
Award SAR/GMTI FRP				1Q				
ER/MP EO/IR/LD Acquisition Strategy Review		1Q						
ER/MP EO/IR/LD MS B		2Q						
ER/MP EO/IR/LD SDD		2-4Q	1-4Q	1-2Q				
ER/MP EO/IR/LD SDD Contract Award		3Q						
ER/MP EO/IR/LD MS C				3Q				

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**11B**

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
11B TSP DEVELOPMENT (JMIP)	5650	8822	12423	7239	0	0	0	0	0	34134

**A. Mission Description and Budget Item Justification:** Tactical SIGINT Payload (TSP) is a UAV mounted SIGINT sensor that detects radio frequency (RF) emitters. TSP, a key Future Combat System (FCS) component, is capable of providing the Unit of Action (UA) Land Commander with an overwatch and a penetrating SIGINT system capable of detecting, identifying, locating, and providing geolocation information on RF emitters throughout the Area of Operations (AO). The UA commander will deploy TSP to provide sensor coverage where FCS ground vehicles cannot perform the SIGINT mission due to radio line of sight blockage. TSP is developing sensors for UA applications to detect low-power radio emitters. The SIGINT payload is scalable and designed to provide maximum flexibility for the UA mission profile. TSP will provide near real time (NRT) actionable intelligence that can immediately be used in the commanders' decision cycle. The TSP electronic emitter information will be correlated with data from other systems, e.g. Prophet and Aerial Common Sensor (ACS) to provide precise targeting information for immediate engagement. The TSP sensors are critical to providing full coverage Intelligence, Surveillance and Reconnaissance (ISR) information for Future Force capabilities for Future Combat Systems and contributing to the Joint Intelligence, Surveillance and Reconnaissance (ISR) net.

FY06 funding supports a flight demonstration, and full environmental testing of one prototype.

FY07 funding supports delivery of four fully tested prototypes to FCS.

<b>Accomplishments/Planned Program</b>	FY 2004	FY 2005	FY 2006	FY 2007
TSP SDD Contract Planning and Solicitation	500	0	0	0
SDD Phase	4950	8622	12223	7039
Modeling and Simulation	200	200	200	200
<b>Totals</b>	<b>5650</b>	<b>8822</b>	<b>12423</b>	<b>7239</b>

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY  
**7 - Operational system development**

PE NUMBER AND TITLE  
**0305204A - Tactical Unmanned Aerial Vehicles**

PROJECT  
**11B**

<b>B. Other Program Funding Summary</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Project 030588G Defense Cryptologic Program Funds - TSP	1497	1991	3963	4346	7382	7376	4000	4000	0	34555
WTCV G86100 Future Combat Systems	0	0	0	752324	3187371	3153325	0	0	Continuing	Continuing

**C. Acquisition Strategy:** A MS B was completed in June 04 for entry into the System Development and Demonstration (SDD) phase. The SDD contract was awarded under a full and open competitive solicitation on 30 June 2004. Funding and award of follow-on procurement will be exercised by Future Combat Systems (FCS).

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**11B**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TSP SDD Contract	C/CPAF	BAE Systems, Nashua, NH	2180	5100	1Q	7190	1Q	2674	1Q	0	17144	0
b . Modeling and Simulation	MIPR	TBD	200	200	1Q	200	1Q	200	1Q	0	800	0
Subtotal:			2380	5300		7390		2874		0	17944	0

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Engineering Support	FFP	MITRE, McLean, VA	423	260	1Q	260	1Q	260	1Q	0	1203	0
b . Matrix Support	MIPR	CECOM, Fort Monmouth NJ	720	125	1Q	200	1Q	350	1Q	0	1395	0
c . Engineering Support	FFP	CACI, Eatontown, NJ	615	865	1Q	963	1Q	1100	1Q	0	3543	0
d . Engineering Support	FFP	Various	280	160	1Q	200	1Q	365	1Q	0	1005	0
e . SDD Engineering Support	MIPR	Various, Ft Monmouth, NJ	500	697	1Q	735	1Q	825	1Q	0	2757	0
Subtotal:			2538	2107		2358		2900		0	9903	0

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**11B**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Support	MIPR	TBD	0	100	2Q	1275	1Q	315	1Q	0	1690	0
b . Continuous Evaluation	MIPR	ATEC, Ft Belvoir, VA	100	100	2Q	100	2Q	100	2Q	0	400	0
c . Test Platform for Flight Demo	TBD	BAE Systems, Nashua, NH	100	725	2Q	900	2Q	575	2Q	0	2300	0
<b>Subtotal:</b>				200		2275		990		0	4390	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In House support	PM, Signals Warfare, Fort Monmouth, NJ	342	400	1-4Q	400	1-4Q	475	1-4Q	0	1617	0
b . Program Support	C/T&M	Various	190	90	1Q	0		0		0	280	0
<b>Subtotal:</b>				532		400		475		0	1897	0

<b>Project Total Cost:</b>			5650	8822		12423		7239		0	34134	0
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# Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY  
7 - Operational system development

PE NUMBER AND TITLE  
0305204A - Tactical Unmanned Aerial Vehicles

PROJECT  
11B

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TSP System Development and Demonstration																																
(1) MS B																																
SDD																																
(2) Contract Award, (3) Flight Demo, (4) Delivery - 1 Prototype, (5) Delivery - 2 Prototypes, (6) Delivery - 1 Prototype																																

▲ 1 MS B

▲ 2 Award

▲ 3 Flight Demo

▲ 4 ▲ 5 ▲ 6

SDD Contract

## Schedule Detail (R4a Exhibit)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**11B**

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
TSP Milestone B	3Q							
TSP SDD Contract	3-4Q	1-4Q	1-4Q	1-4Q				
Flight Demo			1Q					
Prototype Deliveries				1-3Q				

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**123**

COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate								
123 JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (JMIP)	2210	2235	2351	2401	2228	2325	2443	2496	0	20803

**A. Mission Description and Budget Item Justification:** The Joint Technology Center/System Integration Laboratory (JTC/SIL) is a joint facility that develops, integrates and supports the enhancement of its Multiple Unified Simulation Environment (MUSE) capability for Army systems and operational concepts. The JTC/SIL conducts prototype hardware and software development (i.e. TUAV Tactical Unmanned Control System (TUCS), TUAV Institutional Mission Simulation (IMS) Trainer, TUAV C4I module), modeling and simulation support. The MUSE develops real-time, operator in-the-loop simulations that are capable of tactical Hardware-In-the-Loop (HWIL) interoperability for multiple intelligence systems, that may be integrated with larger simulations in support of Service training and exercises. MUSE provides a realistic operational environment, supporting a wide range of C4I applications. This project funds the management of the JTC/SIL and MUSE enhancements.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Implement Tactical Common Datalink Model	0	0	100	0
Incorporate new technology sensors and platforms into the MUSE	200	150	0	0
Develop and upgrade Terrain and Target databases	234	230	80	80
Implement Advanced Sensor / Payload Simulations	190	0	50	75
Initial VTUAV/UCARS Vehicle models	165	0	0	0
Initial ATARS and TARPS simulation model	235	0	0	0
Implement / Integration Weapons Simulation for Weaponized UAV	0	0	75	50
Incorporate STANAG 4586 Datalike Interface Standard	0	0	82	29
Upgrade HLA Certification and DITSCAP	120	214	0	0
Evaluate and integrate New Visualization Technologies into MUSE	0	0	75	75
Technical support of MUSE integration with IEWTPT	0	0	40	40
Enhance VTUAV Models	0	0	50	50
Provide MUSE Configuration Management and Help Desk Services	240	240	250	250
MUSE Equipment	277	335	328	348
JTC/SIL Management	342	236	341	394
Initial development of Multi-Spectral and Hyper-Spectral simulations	0	245	0	0

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**123**

<b>Accomplishments/Planned Program (continued)</b>	FY 2004	FY 2005	FY 2006	FY 2007
Prototype FIA interfaces and capabilities	0	120	0	0
Imagery generation upgrade conversion	0	160	0	0
Enhance IR abd SAR model sets	0	90	100	100
Update interfaces to DoD models	0	215	80	80
Integrate UAV Survivability Models and Attributes	0	0	0	80
Enhance Fixed Wing UAV Models	0	0	50	75
Update MUSE HLA and DITSCAP	0	0	100	100
Enhance of Fixed Target Models	0	0	75	75
Common UAV Trainer Enhancements	0	0	80	80
Implement Tailored Auto Track and Auto Search Models	0	0	0	75
Incorporate Effects of Digital Payload Imagery	0	0	80	30
Continue C4I Enhancements	0	0	90	90
Continue OneSAF Vignette development	0	0	75	75
Continue Usability Enhancements	0	0	100	100
Enhance Small UAV Models	0	0	50	50
Link Fixed Target Database with DIA MIDB	207	0	0	0
<b>Totals</b>	<b>2210</b>	<b>2235</b>	<b>2351</b>	<b>2401</b>

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY  
**7 - Operational system development**

PE NUMBER AND TITLE  
**0305204A - Tactical Unmanned Aerial Vehicles**

PROJECT  
**123**

<b>B. Other Program Funding Summary</b>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 0305204N Navy	1700	1700	1700	1700	0	0			0	6800
PE 0305205F Air Force	2000	2000	2000	2000	0	0			0	8000

**C. Acquisition Strategy:** Continued MUSE development will be accomplished through a combination of Government in-house functional directorate support and contractor support using a variety of existing RDEC contract vehicles and the OMNIBUS 2 contract.

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**123**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Initiate MTI/FTI Sensor Sim Develop/Upgrade SAR	SS/CPFF	AMC/AMCOM/AMRD EC/SED/Redstone Arsenal, AL	143	0		0		0		0	143	143
b . MUSE Remote Support Capability	SS/CPFF	GDIS/Arlington, VA	415	0		0		0		0	415	415
c . Develop MUSE Fixed Target Damage Site Visualization	SS/CPFF	GDIS/Arlington, VA	235	0		0		0		0	235	235
d . Upgrade HLA Certification and DITSCAP	SS/CPFF	AMC/AMCOM/AMRD EC/SED/Redstone Arsenal, AL	479	214	1Q	100	1Q	100	1Q	318	1211	677
e . MUSE Equipment	C/FFP	Various	1775	146	1Q	328	1Q	348	1Q	1611	4208	3278
f . MUSE Hardware Consolidation into Single PC-Based Platform	SS/CPFF	GDIS/Arlington, VA	237	0		0		0		0	237	237
g . Develop / Integrate and Implement TCDL into MUSE in Support of TUAV ORD	SS/CPFF	GDIS/Arlington, VA	150	0		100	1Q	0		0	250	150
h . Develop & Upgrade Terrain & Target Databases	SS/CPFF	Quality Research Institute/HSV, AL	809	230	1Q	80	1Q	80	1Q	768	1967	1381

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**123**

I. Product Development (Continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
i . Incorporate New Technology Sensors & Platforms into the MUSE	SS/CPFF	GDIS/Arlington, VA	200	75	1Q	0		0		1324	1599	1424
j . Integrate Weapon Employment Capabilities into MUSE	C/FFP	TBD	124	0		0		0		596	720	721
k . Evaluate and Integrate New Visualization Technologies into MUSE	C/FFP	TBD	105	0		0		0		530	635	635
l . Link Fixed Target Database with DIA MIDB	SS/CPFF	TBD	245	0		50	1Q	75	1Q	0	370	0
m . Initial VTUAV/UCARS Vehicle models	SS/CPFF	TBD	165	0		50	1Q	50	1Q	0	265	0
n . Initial ATARS & TARPS Simulation model	SS/CPFF	SAIC/HSV, AL.	235	0		0		0		0	235	0
o . Initial effects-based fixed target behavior model	SS/CPFF	SAIC/HSV, AL.	190	0		0		0		0	190	0
p . Initial development of Multi-spectral & Hyper-spectral simulation	SS/CPFF	GDIS/Arlington, VA	0	206	1Q	0		0		0	206	0

# ARMY RDT&E COST ANALYSIS(R3)

February 2005

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**123**

I. Product Development (Continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
q . Prototype FIA interfaces & capabilities			0	120	1Q	0		0		0	120	0
r . Imagery generation upgrade conversion	SS/CPFF	GDIS/Arlington, VA	0	160	1Q	0		0		0	160	0
s . Enhance IR & SAR model sets	SS/CPFF	GDIS/Arlington, VA	0	90	1Q	0		0		0	90	0
t . Implement Advanced Sensor / Payload	SS/CPFF	GDIS/Arlington, VA	0	0		50	1Q	75	1Q	0	125	0
u . Implement / Integration Weapons Simulation for Weaponized UAV	SS/CPFF	GDIS/Arlington, VA	0	0		75	1Q	50	1Q	0	125	0
v . Incorporate STANAG 4586 Datalink Interface Standard	SS/CPFF	GDIS/Arlington, VA	0	0		82	1Q	29	1Q	0	111	0
w . Enhance Small UAV / IR / SAR & Fixed Target Models	SS/CPFF	GDIS/Arlington, VA	0	0		225	1Q	225	1Q	0	450	0
x . Integrate UAV Survivability Models and Attributes	SS/CPFF	GDIS/Arlington, VA	0	0		0		80	1Q	0	80	0

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**123**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
y. Evaluate and Integrate new Visualization Technology / System	SS/CPFF	GDIS/Arlington, VA	0	0		75	1Q	75	1Q	0	150	0
z. Common UAV Trainer Enhancements	SS/CPFF	GDIS/Arlington, VA	0	0		80	1Q	80	1Q	0	160	0
aa. Implement Tailored Auto Track and Auto Search Models	SS/CPFF	GDIS/Arlington, VA	0	0		0		75	1Q	0	75	0
bb. Incorporate Effects of Digital Payload Imagery	SS/CPFF	GDIS/Arlington, VA	0	0		80	1Q	30	1Q	0	110	0
cc. OneSAF Vignette development	SS/CPFF	GDIS/Arlington, VA	0	0		75	1Q	75	1Q	0	150	0
dd. Usability Enhancements	SS/CPFF	GDIS/Arlington, VA	0	0		100	1Q	100	1Q	0	200	0
Subtotal:			5507	1241		1550		1547		5147	14992	9296

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**123**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Provide Direct JSTARS CGS Interface	SS/CPFF	GDIS/Arlington, VA	75	0		0		0		0	75	75
b . Technical Support of MUSE Integration with IEWTPT	C/CPFF	GDIS/Arlington, VA	175	0		40	1Q	40	1Q	132	387	307
c . Initiate MUSE TUAV Flight Performance Model Verification & Validation Process	C/CPFF	Dynetics/Huntsville, AL	465	0		0		0		530	995	995
d . Provide MUSE Configuration Mgt and Help Desk Services	C/CPFF	GDIS, Arlington, VA	940	222	1Q	250	1Q	250	1Q	795	2457	1495
e . JTC/SIL Management	C/CPFF	TBD	200	80	1-3Q	0		0		238	518	358
f . MUSE Equipment	C/CPFF	AMC/AMCOM/AMRD EC/SED/Redstone Arsenal, AL	595	166	1Q	0		0		424	1185	842
g . Incorporate New Technology Sensors & Platforms into the MUSE	C/CPFF	SAIC/Huntsville, AL	200	75	1Q	0		0		530	805	630
h . Update interfaces to DoD models	C/CPFF	GDIS/Arlington, VA	0	215	1Q	80	1Q	80	1Q	0	375	0

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**123**

II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			2650	758		370		370		2649	6797	4702

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Product Evaluation	TBD	TBD	0	0		0		0		132	132	132
b . C4I Enhancements	SS/CPFF	GDIS/Arlington, VA	0	0		90	1Q	90	1Q	0	180	0
Subtotal:			0	0		90		90		132	312	132

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**123**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . JTC/SIL Management Personnel	In House	JTC/SIL/Redstone Arsenal, AL	868	236	1-4Q	341	1-4Q	394	1-4Q	1324	3163	1999
Subtotal:			868	236		341		394		1324	3163	1999
Project Total Cost:			9025	2235		2351		2401		9252	25264	16129

## Schedule Detail (R4a Exhibit)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**123**

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
JTC/SIL MUSE Enhancement and Management	1-4Q							
Implement Tactical Common Datalink Model			1-4Q					
Develop and upgrade Terrain and Target databases	1-4Q							
Evaluate and Integrate New Visualization Technologies into MUSE								
MUSE Equipment	1-4Q							
Initial development of Multi-Spectral and Hyper-Spectral Simulations		1-4Q						
Integrate UAV Survivability Models and Attributes				1-4Q				
Common UAV Trainer Enhancements			1-4Q	1-4Q				
Enhance Small UAV Models			1-4Q	1-4Q				
Update interfaces to DoD Models		1-4Q	1-4Q	1-4Q				

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**D09**

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
D09 EXTENDED RANGE UAV (JMIP)	22623	0	94957	88504	39371	5687	6069	6254	0	280525

**A. Mission Description and Budget Item Justification:** The U.S. Army has a requirement for UAV systems that will provide near real time reconnaissance, surveillance, and target acquisition information to Army maneuver commanders. The Extended Range/Multipurpose (ER/MP) program was initiated to fulfill ORD requirements for a Division/Corps/Unit of Employment Medium Altitude Endurance UAV. ER/MP will utilize the common ground equipment with an extended range air vehicle.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Program Management	1730	0	2732	3433
Government Furnished Equipment	0	0	3141	5353
Development Engineering	0	0	32909	27917
Prototype Manufacturing	0	0	54634	42227
System Test & Evaluation	0	0	1541	9574
Target Location Error / TUAV Enhancements	2350	0	0	0
Acquisition Simulation & Demonstration (SMART)	1000	0	0	0
Long Lead Items for One System Integration & Testing	7633	0	0	0
Tactical Common Data Link Initial Integration	4113	0	0	0
Source Selection	2146	0	0	0
One System Initial Integration with Prime Air Vehicle Vendor	3651	0	0	0
<b>Totals</b>	<b>22623</b>	<b>0</b>	<b>94957</b>	<b>88504</b>

**B. Other Program Funding Summary:** Not applicable for this item.

**C. Acquisition Strategy:** The ERMP ORD was approved by the AROC on 16 December 2003.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY  
**7 - Operational system development**

PE NUMBER AND TITLE  
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PROJECT  
**D09**

Development/Integration of an extended range air vehicle will include a two phased approach. Phase I involves a paper downselect to two vendors. Phase II involves a competition and downselect with a flyoff to one qualified airframe vendor. This vendor will be integrated into the Command Ground Control Equipment. Initial activities would include Requirements Analysis and preparation of a Request for Proposal. Long lead items for the one system integration and testing will be ordered.

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**D09**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Target Location Error / OIF TUAV Enhancements	TBD	AAI, MD	2350	0		0		0		0	2350	Continue
b . Acquisition Simulation & Demonstration	TBD	Camber, Huntsville, AL	1000	0		0		0		0	1000	0
c . Long Lead Items for One System Integration & Test	TBD	Various Contractors	7633	0		0		0		0	7633	0
d . Tactical Common Data Link Initial Integration	TBD	Various Contractors	4113	0		0		0		0	4113	0
e . One System Initial Integration with Prime AV Vendor	TBD	Various Contractors	3651	0		0		0		0	3651	0
f . Source Selection	TBD	Other Government Agencies	2146	0		0		0		0	2146	0
g . Development Engineering			0	0		32909	1-2Q	27917	1-2Q	0	60826	0
h . Prototype Manufacturing			0	0		54634	1-2Q	42227	1-2Q	0	96861	0
i . Government Furnished Equipment			0	0		3141	1-3Q	5353	2-3Q	0	8494	0

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**D09**

I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			20893	0		90684		75497		0	187074	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Contractor Engineering Support	MIPR / PWD	Various Contractors	1000	0		1236	1-2Q	1527	1-2Q	0	3763	0
b . Government Engineering Support	MIPR / PWD	Other Government Organizations	330	0		1000	1-2Q	1400	1-2Q	0	2730	0
Subtotal:			1330	0		2236		2927		0	6493	0

# ARMY RDT&E COST ANALYSIS(R3)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**D09**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Test and Evaluation		TBD	0	0		1541	2-3Q	9574	2-3Q	0	11115	0
Subtotal:			0	0		1541		9574		0	11115	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program management	MIPR / PWD	PM UAV, Redstone Arsenal, AL	400	0		496	1-4Q	506	1-4Q	0	1402	0
Subtotal:			400	0		496		506		0	1402	0

Project Total Cost:			22623	0		94957		88504		0	206084	Continue
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## Schedule Detail (R4a Exhibit)

**February 2005**

**BUDGET ACTIVITY**  
**7 - Operational system development**

**PE NUMBER AND TITLE**  
**0305204A - Tactical Unmanned Aerial Vehicles**

**PROJECT**  
**D09**

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Paper Downselect to two Venders		1-2Q						
Downselect to one Vender		2Q	1-4Q	1-4Q				
P3I				1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Government Furnished Equipment			1-3Q	1-3Q	1-3Q			
Development Engineering			1-3Q	1-3Q	1-3Q	1-3Q	1-3Q	1-3Q
Prototype Manufacturing			1-3Q	1-3Q				
System Test & Evaluation			1-4Q	1-4Q				