ARMY RDT&E BUDGET IT	EM JU	STIFI	CATIO	N (R-2	Exhibi	it)	Fe	ebruary 2	003	
BUDGET ACTIVITY 5 - System Development and Demonstration			E NUMBER)604622A			Tactical	Vehicles			
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
Total Program Element (PE) Cost	2510	14521	9200	10756	11727	14586	981	981	0	65262
659 FAMILY OF HVY TAC VEH	0	953	1467	0	0	0	0	0	0	2420
E49 HEMTT	2510	13568	6749	9773	10747	13607	0	0	0	56954
E50 TRAILER DEVELOPMENT	0	0	984	983	980	979	981	981	0	5888

A. Mission Description and Budget Item Justification: This program element aligns system development and demonstration of Heavy Tactical Vehicles with Objective Force requirements to support combat and combat support missions. These missions include the following: line haul, local haul, and unit resupply. These trucks transport water, ammunition, and general cargo over all terrain and throughout the battle-space. FY2004 Project 659 provides funds for the development of a Crew Protection Kit on the M915 Family of Vehicles. FY2004/2005 Project E49 provides funds for the development of the Future Tactical Truck System (FTTS). FY2004/2005 Project E50 provides funds for performance of feasibility testing on two M872A4 Semi-trailers with enhanced mobility characteristics when towed by an improved M915A4 Truck Tractor Line haul and to procure and conduct feasibility testing on two M870A3 Semi-trailers and perform assessment of the trailers' capability to match up to the M983 HEMTT Operational Mode Summary/Mission Profile with Enhanced Mobility Characteristics. This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit) BUDGET ACTIVITY 5 - System Development and Demonstration PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical Vehicles

B. Program Change Summary	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2003)	0	3990	8354	9939
Current Budget (FY 2004/2005 PB)	2510	14521	9200	10756
Total Adjustments	2510	10531	846	817
Congressional program reductions			-154	-183
Congressional rescissions		-167		
Congressional increases		11200		
Reprogrammings	2410	-83		
SBIR/STTR Transfer		-419		
Adjustments to Budget Years	100		1000	1000

Funding - FY2003: Increase of \$11.2M supports the Heavy Expanded Mobility Tactical Truck (HEMTT) Technical Improvements Program.

Funding - FY2004: Increase of \$1M supports the feasibility testing on the M872A4 Semi-trailer. Funding - FY2005: Increase of \$1M supports the feasibility testing on the M870A3 Semi-trailer.

ARMY RDT&E BUDGET IT	EM JU	STIFI	CATIO	N (R-2	A Exhi	bit)	February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER . 0604622A			Tactical	Vehicles		PROJECT 659		
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
659 FAMILY OF HVY TAC VEH	0	95:	3 1467	0	0	0	0	0	0	2420

A. Mission Description and Budget Item Justification: FY 2004 Project 659 provides funds for the engineering development and prototype of the Crew Protection Kit for the M915 Family of Vehicles. The Crew Protection Kit will provide protection to the two-man crew against small arms, mines and artillery and is identified as a material requirement under an ORD for the Tactical Wheeled Vehicle Crew Protection Kit (CPK) dated 19 Jan 1996. This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Development of the engineering and prototype models of the M915 Crew Protection Kit	0	953	110	0
Acquire prototypes for testing	0	0	521	0
Conduct prototype testing on the M915 Crew Protection Kit	0	0	836	0
Totals	0	953	1467	0

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit) February 2003												
BUDGET ACTIVITY 5 - System Development and Demonstration			BER AND TI 2 A - Fan		eavy Tac	tical Veh	icles	PROJE 659	CT			
B. Other Program Funding Summary	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost		
OPA1 D15900, Truck, Tractor, Line Haul M915A2	42260	41865	28648	16030	16374	16740	() (0	161917		

<u>C. Acquisition Strategy:</u>Limited RDTE effort to support follow-on production.

	ARM	Y RDT&E CO	ST AN		` ,				Febr	uary 200.		
BUDGET ACTIVITY 5 - System Developme	ent and De	emonstration		PE NU 060	умвек ani 4622A - F	TITLE amily of	Heavy Ta	ctical Ve	hicles		PROJEC 659	Т
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Targe Value of Contrac
a . Program Management	IN-HOUSE	TACOM, Warren, MI	1336	953	2-4Q	110	1Q	0		0	2399	2399
b . Crew Protection Kit System Development & Demonstration Award	C-CPFF	TBD	0	0		521	1Q	0		0	521	521
Subtotal:			1336	953		631		0		0	2920	2920
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Targe Value of Contrac
			0	0		0		0		0	0	(

	ARM	Y RDT&E CO	ST AN						Febi	ruary 200			
BUDGET ACTIVITY 5 - System Developm	ent and Do	emonstration			umber ani 4622A - F		Heavy Ta	etical Ve	Vehicles PROJECT 659				
II. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Targe Value o Contra	
a . Crew Protection Kit Testing	MIPR	APG, Aberdeen, MD	0	0		836	2-4Q	0		0	836	83	
Subtotal:			0	0		836		0		0	836	83	
	Contract	Performing Activity &	Total	FY 2003	FY 2003	FY 2004 Cost	FY 2004 Award	FY 2005 Cost	FY 2005 Award	Cost To Complete	Total Cost	Targ Value (
IV. Management Services		Location	PVs Cost	Cost	Δward								
IV. Management Services	Method & Type	Location	PYs Cost	Cost	Award Date	Cost	Date	Cost	Date			Contrac	
IV. Management Services Subtotal:	Method &	Location	PYs Cost 0	Cost 0		0		0		0	0		
	Method &	Location								-		Contra	

Schedule Profile Det	tail (R-4a	Exhibit	t)				February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBI 060462 2	ER AND TIT 2A - Fam		ical Vehi	cles	којест 659			
Schedule Detail	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		
Award System Development & Demonstration contract for Crew Protection Kit			1Q							
Conduct testing on Crew Protection Kit			2-4Q							

ARMY RDT&E BUDGET IT	STIFI	TIFICATION (R-2A Exhibit)					February 2003			
BUDGET ACTIVITY 5 - System Development and Demonstration		e number 2 0 604622A			Tactical [*]	Vehicles		PROJECT E49		
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
E49 HEMTT	2510	13568	6749	9773	10747	13607	0	0	0	56954

A. Mission Description and Budget Item Justification: FY2004/FY2005 funds prototype development, which leads to the competitive procurement of the Future Tactical Truck System (FTTS). The FTTS is the Objective Force sustainment vehicle system and is the optimal solution to address numerous shortfalls exhibited by the Current Fleet when assessed against required Objective Force support. The Current tactical wheeled vehicle fleet cannot sustain the Objective Force due to an outdated architecture that requires multiple variants and models, an increasingly cumbersome logistics footprint, poor C-130 deployability, poor fuel economy, an inability to maintain the OPTEMPO of its pacing system, the Future Combat System (FCS), and mobility limitations which will not enable true seamless, just in time support. FTTS is one of the Chief of Transportation's top three priorities and will enhance sustainability and reliability by means of onboard diagnostics and prognostics and achieve mobility matching that of the FCS through advanced suspension and propulsion systems. In addition, FTTS will provide unparalleled deployability through the ability to be loaded aboard the C-130 cargo, and load/offload the C-130 without ancillary material handling equipment through the use of an integrated smart load handling system. Crew survivability will be greatly increased using subsystems that provide an integrated mine/ballistic protection, NBC and ambush protection, and enhanced situational awareness as well as allowing network centric operations with the rest of the battlefield. Technologies such as on-board power generation, which reduce supplemental generator requirements, and increased fuel economy, will enable the FTTS to be a crucial logistics footprint reducer for the Objective Force. The focus of the System Development and Demonstration phase is to complete the FTTS architecture design and thus allow for the seamless integration of high-payback technologies into a capable, affordable package. A comprehensive analysis has revealed that no single existing vehicle system can or will be able to solve all of these requirements. Without the FTTS, the FCS will have to rely upon the current fleet with all of its overwhelming shortcomings for its support. FY2004 funds also complete the test program for a FY2003 funded effort directed toward advanced technology improvements for the Heavy Expanded Mobility Tactical Truck (HEMTT) Extended Service Program and HEMTT new production. It will also provide for evolutionary transformation of the HEMTT fleet. Research efforts will be partnered with the National Automotive Center and other private industry partners to incorporate diagnostics, multiplexed smart wiring, Integrated Electronic Tech Manuals, and other advanced technology to reduce Operations and Support costs and improve the readiness of the HEMTT fleet. Prior to FY2004 funding supports development of a Block Modification on the Movement Tracking System (MTS). This Block Modification will increase the performance and functionality of the MTS through multiple interface developments. This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Encryption Validation	240	0	0	0
User Functional Description (UFD)enhanced software development.	650	1300	0	0
Embedded Military Global Positioning System Selective Availability Anti-Spoofing Module interface development.	859	500	0	0
United States Army, Europe-Defense Transportation Recording And Control System interface development.	0	100	0	0

ARMY RDT&E BUDGET I'	TEM J	USTII	FICAT	ION (I	R-2A E	xhibit)		Febru	ary 2003	
BUDGET ACTIVITY 5 - System Development and Demonstration	BER AND TI 2 A - Fan		eavy Tac	tical Veh	icles	PROJE E49	ECT			
Accomplishments/Planned Program (continued) Automated Identification Technology/Radio Frequency Identific	ation Device	interface de	velopment.				FY 200 72	2 FY 200 7 10		FY 2005 0
Global Combat Support System-Army (Combat Service Support Below) interface development.	Control Syst	em/Force XX	XI Battle Co	mmand Batta	alion/Brigado	e and	3		·	0
HEMTT advanced technology improvement development.								0 790 0 280		0
HEMTT advanced technology improvement prototypes. Testing of HEMTT advanced technology improvements.								- -	0 2000	0
FTTS Systems Integration (Government modeling & simulation)								0	0 4749	0
FTTS Systems Integration (Contractor Modeling and Simulation)								0	0 0	4000
FTTS Systems Integration (Prototype Development)								0	0 0	5773
Totals							251	0 1356	8 6749	9773
B. Other Program Funding Summary	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA1, DA0500, Family of Heavy Tactical Vehicles	159099	252365	133130	99743	97837	224698	90894	75123	Continuing	Continuing
OPA1, D16301 Future Tactical Truck System (FTTS)	0	0	C	O	C	C	11497	183477	Continuing	Continuing

C. Acquisition Strategy: FTTS trails the FCS by 2 years, as FCS is the pacing system and drives FTTS support requirements. This enables FTTS to achieve commonality with the FCS and reduce RDT&E expenses by leveraging the FCS Concept/System Development and Demonstration (SDD) effort. The initial stages of the FTTS RDT&E effort will rely almost entirely on modeling and simulation in order to reduce program risk and development costs. This data would be used to support the competitive award for the prototype development phase of the SDD efforts. Award of a production contract will follow successful completion of SDD prototype testing and evaluation.

	ARM	Y RDT&E CO	ST AN		` '				Febi	ruary 200		
BUDGET ACTIVITY 5 - System Developm	ent and De	emonstration			number ani 04622A - F		Heavy Ta	ectical Ve	ehicles		PROJEC E49	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cos		FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Targe Value of Contrac
a . MTS Software Development, Engineering, Testing, Program Management	C/CPIF	TBD	2510	2861	3Q	0		0		0	5371	(
b . Technical Improvement Development - Government	IN HOUSE	TACOM, Warren, Ml	0	300		0		0		0	300	(
c . Technical Improvement Development - Contractor	CPFF	Oshkosh Truck Corp., Oshkosh, WI	0	7607	2Q	0		0		0	7607	(
d . Technical Improvement Prototypes	CPFF	Oshkosh Truck Corp., Oshkosh, WI	0	2800) 4Q	0		0		0	2800	(
e . FTTS Systems Integration - Government	IN HOUSE	TACOM, Warren, Ml	0	C		4749	2Q	0		0	4749	(
f . FTTS Systems Integation - Contractor	CPFF	TBD	0	(0		9773	2Q	17354	27127	(
Subtotal:			2510	13568	3	4749		9773		17354	47954	(

	AKW	IY KDT&E CC	DST AN	ALYS	SIS(R-3))			Febr	ruary 200	3	
BUDGET ACTIVITY 5 - System Developm	nent and D	emonstration	PYs Cost Cost Award Date Cost Award Date Complete Date 0 0 0 0 0 0 0 0 Total PYs Cost FY 2003 Cost FY 2003 Cost FY 2004 Cost FY 2004 Cost FY 2005 Cost FY 2005 Cost Cost To Complete Complete Complete Cost Date Date Date Date Date Date		PROJEC E49	T						
II. Support Cost	Contract Method & Type	Performing Activity & Location			Award		Award		Award	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	(
		T										_
		D.C. A.C.	T 1	EV 2002	EM 2002	EV 2004	EV 2004	EV 2005	EV 2005	C. IT.	T. ()	T
III. Test and Evaluation a . HEMTT Technical	Contract Method & Type MIPR	Performing Activity & Location APG, Aberdeen, MD			Award		Award		Award	Cost To Complete	Total Cost	Target Value of Contract
III. Test and Evaluation	Method & Type	Location	PYs Cost	Cost	Award	Cost	Award Date	Cost	Award	Complete	Cost	Value of Contract
III. Test and Evaluation a . HEMTT Technical	Method & Type	Location	PYs Cost	Cost	Award	Cost	Award Date	Cost	Award	Complete	Cost	Value of Contract

BUDGET ACTIVITY 5 - System Developm		Y RDT&E CO		PE N	UMBER AN		Heavy Ta	nctical Ve		ruary 200	PROJEC E49	Т
V. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Targe Value o Contrac
Subtotal:			0	0		0		0		0	0	
Project Total Cost:			2510	13568		6749		9773		24354	56954	

Schedule Profile De	etail (R-4a]	Exhibi	t)		February 2003				
BUDGET ACTIVITY 5 - System Development and Demonstration			nd Demonstration PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical V						ојест Е49
Schedule Detail	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
MTS Interface development	2-4Q	1-3Q							
HEMTT Technical Improvement development		2-4Q	1-3Q						
HEMTT Technical Improvement Prototypes		4Q							
HEMTT Technical Improvement testing			4Q	1-3Q					
FTTS Milestone A Decision		4Q	1Q						
FTTS Advanced Concept Technology Demonstration			1-4Q	1-4Q	1-4Q	1-4Q			
FTTS Modeling & Simulation			2Q						
FTTS ORD Approval				2-3Q					
FTTS Milestone B Decision				2-3Q					
FTTS Prototype Development				2-4Q	1-4Q				
FTTS Prototype Testing						2-4Q			
FTTS Milestone C Decision							2-3Q		

ARMY RDT&E BUDGET IT	EM JU	STIF	CATIO	N (R-2	A Exhi	bit)	Fe	ebruary 2	003	
BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER . 0604622A			Tactical	Vehicles		PROJECT E50	
COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
E50 TRAILER DEVELOPMENT	0		0 984	983	980	979	981	981	0	5888

A. Mission Description and Budget Item Justification: FY2004/FY2005 funds provide for performance of feasibility testing on two M872A4 Semi-Trailers with enhanced mobility characteristics when towed by an improved M915A4 Truck Tractor Line Haul and to procure and conduct feasibility testing on two M870A3 Semi-Trailers and performance assessment of the Trailers' capability to match up to the M983 Heavy Expanded Mobility Tactical Truck (HEMTT) Operational Mode Summary/Mission Profile with Enhanced Mobility Characteristics. This project supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Feasibility testing of enhanced M872A4 and M870A3 Semi-trailers.	0	0	200	400
Program Integration	0	0	300	200
Program Management	0	0	84	83
Enhanced M870A3 Semi-Trailer.	0	0	200	150
Enhanced M872A4 Semi-Trailer.	0	0	200	150
Totals	0	0	984	983

ARMY RDT&E BUDGET I	TEM J	USTII	FICAT	ION (I	R-2A E	xhibit)		Febru	ary 2003	
BUDGET ACTIVITY 5 - System Development and Demonstration PE NUMBER AND TITLE 0604622A - Family of Heavy Tactical Vehicle									PROJE E50	СТ
B. Other Program Funding Summary	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA1 D01600 Semi-Trailer FB BB/CONT TR 34T M872A4	9774	24655	14966	1785	1765	1764	1044	9489	0	65242
OPA 1 D00700 Semi-Trailer LB 40T M870A3	1451	1875	1730	1603	0	377	C	0	0	7036

C. Acquisition Strategy: Conduct feasibility testing through Research and Development Program Integrator on two commercial semi-trailers with enhanced mobility and materiel handling characteristics when towed by an improved M915A4 Truck, Tractor, Line Haul. Program Integrator will be competitively selected. Procure and conduct mobility assessment on two trailers (M870A3 and Self-Loading/Off-Loading Trailer (SLOT)) when towed by the M983 Engineer Variant Heavy Expanded Mobility Tactical Truck (HEMTT). The goal is to identify concepts that would enhance the system's overall mobility through either modification of existing equipment or development of new equipment and enhanced equipment transportability and safety through improved or innovative tie-down and lifting concepts. Research and Development contractor will recommend improvements in hardware to be acquired sole source for testing.

	ARM	Y RDT&E CO	ST AN		` '				Febi	ruary 200			
BUDGET ACTIVITY 5 - System Developn	nent and Do	emonstration		PE N 060	umber ani 4622A - I	TITLE Samily of	Heavy Ta	ectical V				ЭЈЕСТ Е 50	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Targe Value of Contrac	
a . Program Integrator	C-CP/FF	To Be Selected (TBS)	0	0		300	2Q	200	3Q	Continue	500	Continue	
b. Program Management	In-House	TACOM-WRN	0	0		84	2Q	83	2Q	Continue	167	Continue	
c . Enhanced M872	C-FF	To Be Selected (TBS)	0	0		200	3Q	150	3Q	Continue	350	Continue	
d . Enhanced M870	C-FF	To Be Selected (TBS)	0	0		200	3Q	150	3Q	Continue	350	Continue	
Subtotal:			0	0		784		583		Continue	1367	Continue	
		•											
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Targe Value of Contrac	
Subtotal:			0	0		0		0		0	0	(

	ARM	IY RDT&E CO	ST AN						Febi	ruary 200		
BUDGET ACTIVITY 5 - System Developm	nent and D	emonstration			umber ani 4622A - F		Heavy Ta	actical Vo	ehicles		PROJEC E50	
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Complete	Total Cost	Targe Value o Contrac
a . M872A4, M870A3	MIPR	Aberdeen Test Center, Aberdeen, MD	0	0		200	2Q	400	2Q		600	Continu
Subtotal:			0	0		200		400		Continue	600	Continue
IV. Management Services	Contract Method &	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award	FY 2004 Cost	FY 2004 Award	FY 2005 Cost	FY 2005 Award	Complete	Total Cost	Targe Value o
	OTC.				Date		Date		Date			Contrac
Subtotal:	Type		0	0		0		0		0	0	

Schedule Profile De	tail (R-4a	Exhibit	t)				Februa	ry 2003	
BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBI 060462 2	ER AND TIT 2A - Fam		avy Tacti	cal Vehi	cles	P	PROJECT E50
Schedule Detail	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Conduct feasibility testing on enhanced M872A4 Semi- Trailer.			2-4Q	2-4Q	2-4Q	2-4Q	2-4Q	2-4Q	
Conduct feasibility testing on enhanced M870A3 Semi- Trailer.			2-4Q	2-4Q	2-4Q	2-4Q	2-4Q	2-4Q	