

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604633A - AIR TRAFFIC CONTROL						PROJECT 586		
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
586 AIR TRAFFIC CONTROL	1159	2179	2339	2613	2705	2846	2844	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element (PE) funds continuous efforts in the development of modernized tactical and fixed base Air Traffic Control (ATC) systems that will significantly enhance aviation safety in both the tactical and strategic ATC domains. Funded in this program element is the development of the Mobile Tower System (MOTS). The MOTS is a tactical mobile tower designed to meet the deployability and communication requirements of the objective force. A Non-Developmental Item (NDI), MOTS will be equipped with modernized and secure avionics to ensure highly reliable and consistent tactical aircraft communications across all frequency bands and ranges to ensure compatibility with all Army, Joint, and Allied aircraft. MOTS will provide modern digital, secure, anti-jam communications, a digital recorder, basic weather information, a precision location capability, and full compatibility with all military and civilian airfields as well as tactical landing zones. The currently fielded systems, AN/TSW-7A and AN/TSQ-70A, are obsolete and require two one and a half ton vehicles, a 15Kw generator, and a support trailer to fully operate the system. The system is not deployable on any aircraft smaller than a C-5, does not meet communications requirements across the operational spectrum, and it is not maintainable because parts are no longer manufactured for the system. An integral part of the MOTS program is the Portable Airfield Lighting System (PALS). This program element includes funds for the trailer mounted PALS and the man-portable PALS. The trailer mounted PALS provides mobile aircraft lighting and all the necessary elements to establish a remote heliport/landing zone and a 10,000 foot runway. Currently, ATC units do not have an airfield lighting capability and only limited tactical lighting capabilities. PALS provides positive visual cues for runway alignment and rate of descent, allows for lower descent altitudes during precision approaches, and provides positive visual directions for Forward Area Rearming/Refueling Point (FARP) operations. The man-portable variant of PALS deploys with the Tactical Terminal Control System (TTCS), and provides lighting for tactical landing zones and position lights for four FARP points. PALS provides a significant force protection enhancement to the safety of Army, joint, and allied aircraft operations at all landing sites. The system will significantly enhance aviation safety for all aircraft operations, especially during night and inclement weather operations. Both MOTS and PALS are effective risk management tools. In addition to PALS integration, the TTCS retrofit includes the ARC-220 radio upgrade and conversion to electronic documentation. Additionally, this PE funds evaluation of the feasibility of alternatives for Tactical Airspace Integration System (TAIS) connectivity and interoperability with the National Airspace System (NAS) system for Homeland Security, and TAIS interoperability with Air Traffic Navigation, Integration and Coordination System (ATNAVICS) airspace command and control.

New efforts will include the initial design and development of a Combat Mission Simulator (CMS) to support the TAIS and ATNAVICS Systems. The CMS will significantly improve controller training and support operational currency requirements. Other efforts support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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- 946 Completed all Concept and Technology Development Phase requirements and obtained approval from Milestone Decision Authority to proceed toward Milestone B and the System Development and Demonstration Phase (MOTS)
- 213 Designed, coordinated and executed two combined developmental/operational limited user tests to compare Air Force & Marine Corps versions of the Mobile Tower System (MOTS)

Total 1159

FY 2002 Planned Program

- 200 TTCS Retrofit/Testing
- 882 Develop MOTS Prototype
- 200 NAS Interface with TAIS
- 347 Concept Exploration for ATC Simulators/Trainers (ATNAVICS/TAIS)
- 550 TTCS/PALS Testing and Integration

Total 2179

FY 2003 Planned Program

- 525 Complete Developmental Testing with MOTS
- 600 Complete MOTS/PALS Testing and Integration
- 296 Complete NAS Interface with TAIS
- 918 Develop TAIS interface with ATNAVICS

Total 2339

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<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	2008	2197	2292
Appropriated Value	2026	2197	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-18	0
b. SBIR / STTR	-51	0	0
c. Omnibus or Other Above Threshold Reduction	0	0	0
d. Below Threshold Reprogramming	-798	0	0
e. Rescissions	-18	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	47
Current Budget Submit (FY 2003 PB)	1159	2179	2339

<u>C. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
APA AA0050 - Air Traffic Control	73464	57892	64410	57964	57924	17820	52238	Continue	Continue

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D. Acquisition Strategy: Develop interfaces of ATC tactical equipment with National Air Space Systems (NAS) and explore new technology initiatives.

<u>E. Schedule Profile</u>	<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>
MOTS Concept and Development Stage	3Q						
Designed, coordinated and executed two combined development/operational limited user tests	3-4Q						
TTCS Retrofit/Testing		2Q					
Develop MOTS Prototype		3-4Q					
NAS Interface with TAIS System		2Q					
Concept Exploration for ATC Simulators/Trainers (ATNAVICS/TAIS)		1-3Q					
TTCS/PALS Testing & Integration		2-4Q					
Complete Developmental Testing with MOTS			1Q				
Complete MOTS/PALS Testing & Integration			1Q				
Complete NAS Interface with TAIS			2Q				
Develop TAIS Interface with ATNAVICS			2Q				

ARMY RDT&E COST ANALYSIS(R-3)

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATNAVICS	CPFF	Raytheon, Boston, MA	26100	0		0		0		0	26100	26100
b . MOTS	TBD	TBD	2043	496	3Q	882	3-4Q	0		0	3421	0
c . ATNAVICS GFE	Reqn	Various	8	0		0		0		0	8	0
d . PALS	FFP	GALAXY LITEBEAMS, INC. EGG HARBOR TOWNSHIP, NJ; LASER GUIDANCE, INC. REDMOND, WA	2416	0		0		0		0	2416	0
e . NAS/TAIS INTERFACE	TBD	TBD	0	0		200	2Q	296	2Q	0	496	0
f . ATC SIMULATORS/TRAINERS	TBD	TBD	0	0		217	1-3Q	0		0	217	0
g . TAIS ATNAVICS INTERFACE	TBD	TBD	0	0		0		918	2Q	Continue	Continue	Continue
h . TTCS/PALS TESTING & iNTEGRATION	TBD	TBD	0	0		300	2-4Q	0		0	300	0
i . MOTS/PALS TESTING & iNTEGRATION	TBD	TBD	0	0		0		100	1Q	0	100	0
Subtotal:			30567	496		1599		1314		Continue	Continue	Continue

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATNAVICS	MIPR	AMCOM, AL / CECOM, NJ	2688	0		0		0		0	2688	0
b . MOTS	TBD	TBD	311	210	3Q	0		0		0	521	0
c . PALS	Various	Various	1613	0		0		0		0	1613	0
d . TTCS RETROFIT	TBD	TBD	0	0		125	2Q	0		0	125	0
e . ATC SIMULATORS	TBD	TBD	0	0		0		0		0	0	0
Subtotal:			4612	210		125		0		0	4947	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATNAVICS	MIPR	TEXCOM, Ft Hood, TX / TECOM, APG, MD	1538	75	3Q	0		0		0	1613	0
b . MOTS	MIPR	AATD, FT EUSTIS, VA	0	213	3Q	0		525	1Q	0	738	0
c . TTCS TESTING	TBD	TBD	0	0		75	2Q	0		0	75	0
d . VIDS	MIPR	HUNTER AAF, GA	75	0		0		0		0	75	0

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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . ATC SIMULATORS	TBD	TBD	0	0		0		0		0	0	0
f . TTCS/PALS TESTING & INTEGRATION	TBD	TBD	0	0		250	2-4Q	0		0	250	0
g . MOTS/PALS TESTING & INTEGRATION	TBD	TBD	0	0		0		500	1Q	0	500	0
Subtotal:			1613	288		325		1025		0	3251	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . ATNAVICS	T&M	Dynamic Rsch Corp, Madison, AL	1125	0		0		0		0	1125	0
b . MOTS	CPFF	CAS, INC, HUNTSVILLE, AL	0	165	3Q	0		0		0	165	0
c . PALS	Various	Various	271	0		0		0		0	271	0
d . NAS/-TAIS INTERFACE	TBD	TBD	0	0		0		0		0	0	0
e . ATC SIMULATORS	TBD	TBD	0	0		130	1-3Q	0		0	130	0

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IV. Management Services (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
f. TAIS/ATNAVICS INTERFACE	TBD	TBD	0	0		0		0		0	0	0
Subtotal:			1396	165		130		0		0	1691	0
Project Total Cost:			38188	1159		2179		2339		Continue	Continue	Continue