

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2007

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604633A - AIR TRAFFIC CONTROL							PROJECT 586		
COST (In Thousands)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
586 AIR TRAFFIC CONTROL	6307	4477	8956	14268	2720	4864	7135	6636		55363

A. Mission Description and Budget Item Justification: This program element 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 current to future force. The 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 in an armored, survivable vehicle. MOTS is an effective risk management tool.

Funded product improvements include the Alternative Communications/ATC Networking (Alt Comms/AN) integration; the Air Traffic Navigation, Integration, and Coordination System (ATNAVICS); the Tactical Airspace Integration System (TAIS); and the Automatic Dependent Surveillance-Broadcast (ADS-B)/Combat Identification (CID) technologies. As the Federal Aviation Agency (FAA) and Department of Defense (DoD) transition to aircraft self-reporting technologies such as ADS-B/CID and Mode 5, PM ATC will equip tactical and fixed base ATC units with ground receivers and networks to process the aircraft positional data. The ATNAVICS will be upgraded with a capability to interface with other ATC equipment and Army systems. Ultimately, ATNAVICS will feed positioning and identification data of friendly air vehicles (fixed, rotary, and unmanned aerial vehicles) into the Single Integrated Air Picture (SIAP) for improved low altitude situational awareness, track continuity, airspace deconfliction and fratricide prevention. Precision Approach Radar (PAR) Range Detection product improvement will ensure that ATNAVICS can detect objects at a closer range. As part of the Army Battle Command System (ABCS), TAIS migration plans include development of Army Airspace Command and Control (A2C2) services, integration into Joint Battle Command service based architecture, and migration from a Universal Network Information Exchange (UNIX) to Windows. Windows migration is required to improve obsolescence costs and supportability issues. In addition, TAIS will develop airspace management services supporting unmanned aerial vehicles, manned flight deconfliction and future combat system interfaces, as well as integrating CID technologies. TAIS P3I will also integrate Blue Force Tracking (BFT) solutions into TAIS Shelters. Beginning in 2008, voice radios currently integrated into ATC systems will begin migration to accommodate both voice and high bandwidth data throughput. In a networked battlefield, joint service systems and radars can provide data beneficial to ATC missions assuming a communications infrastructure and data processing capability is embedded in ATC systems.

Accomplishments/Planned Program:	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
MOTS System Development, Demonstration & Testing	5996	3954	6398	2434
Alt Comms/ATC Networking				1675
ATNAVICS Modernization				2363
TAIS Battle Command Migration			2160	5500
TAIS P3I				1545
ADS-B/CID				300

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Tech and Log support	237	301	314	363
Program Management Support	74	75	84	88
Small Business Innovative Research/Small Business Technology Transfer Programs		147		
Total	6307	4477	8956	14268

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<u>B. Program Change Summary</u>	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	4444	4527	4026	3693
Current BES/President's Budget (FY 2008/2009)	6307	4477	8956	14268
Total Adjustments	1863	-50	4930	10575
Congressional Program Reductions		-17		
Congressional Rescissions	-158			
Congressional Increases				
Reprogrammings	2126	-33		
SBIR/STTR Transfer	-105			
Adjustments to Budget Years			4930	10575

FY 2008: \$4.9 million funding increase for (1) MOTS contract to support uparmor requirements directed by DoD; (2) TAIS Battle Command Migration to support Army software blocking interoperability requirements and ensure development of Service based software to support interoperability with Battle Command Systems of Systems Architecture and integration of Air Traffic Services (ATS) requirements.

FY 2009: \$10.5 million funding increase for (1) Completion of MOTS System Development and Demonstration contract; (2) Completion of TAIS Battle Command Migration effort begun in FY08; (3) Use Alt Comms/ATC Networking to begin migration to support future ATC communications which are evolving to provide capabilities supporting both voice and high band width data throughput and ensure connectivity to net centric operations providing critical tactical, planning, and situational awareness information to DoD and National Airspace users.

<u>C. Other Program Funding Summary</u>	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
APA AA0050 - Air Traffic Control	63492	92504	94841	123576	78992	85900	85808	88658	Continuing	Continuing

Comment:

D. Acquisition Strategy PM ATC will continue to embrace new technology initiatives for the development of tactical ATC equipment and the integration of new technology into existing systems. Technology insertion will be acquired through contract modifications, engineering services tasks, and new/follow-on contracts. MOTS System Development and Demonstration contract was awarded competitively in FY 2006. MOTS development and testing to be completed in FY 2009.

ARMY RDT&E COST ANALYSIS (R3)

February 2007

BUDGET ACTIVITY			PE NUMBER AND TITLE									PROJECT		
5 - System Development and Demonstration			0604633A - AIR TRAFFIC CONTROL									586		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
MOTS System Development and Demo	C/FFP/CPFF	Sierra Nevada Corp, Sparks, Nevada		5841	3Q	3707	3Q	5565	2Q	1533	2Q		16646	
Tech and Log Development Support	Inhouse	PM ATC, Redstone Arsenal, AL	599	237	1-4Q	301	1-4Q	314	1-4Q	363	1-4Q	Cont.	Cont.	Cont.
Subtotal:			599	6078		4008		5879		1896		Cont.	Cont.	Cont.
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
MOTS Systems Development Support	Various	Various	555	94	1-4Q	147	1-4Q	293	1-4Q	301	1-4Q		1390	
Alt Comms/ATC Networking	C/CPFF	TBD								1675	2-4Q	Cont.	Cont.	Cont.
ATNAVICS Modernization	SS/CPFF	Raytheon, Marlboro, MA								2363	3Q	Cont.	Cont.	Cont.
TAIS Battle Command Migration	SS/CPFF	General Dynamics C4S, Huntsville, AL						2160	1Q	5500	1Q		7660	
TAIS P3I	SS/CPFF	General Dynamics C4S, Huntsville, AL								1545	1Q		1545	
ADS-B/CID	C/CPFF	TBD								300	2Q	Cont.	Cont.	Cont.
Subtotal:			555	94		147		2453		11684		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
MOTS Prototype Testing	MIPR	Various		61	2Q	100	2Q	540	4Q	600	3Q		1301	
Subtotal:				61		100		540		600			1301	

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	In-House	PM ATC, Redstone Arsenal, AL	1788	74	1-4Q	75	1-4Q	84	1-4Q	88	1-4Q	Cont.	Cont.	Cont.
SBIR/STTR						147							147	
Subtotal:			1788	74		222		84		88		Cont.	Cont.	Cont.
Project Total Cost:			2942	6307		4477		8956		14268		Cont.	Cont.	Cont.

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>
MOTS System Development Demonstration and Testing	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				
				2Q				
ALT COMMS/ATC NETWORKING				2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
ATNAVICS Modernization				2Q - 4Q	1Q - 4Q	1Q - 4Q		
TAIS Battle Command Migration			1Q - 4Q	1Q - 4Q				
TAIS P3I Development				2Q - 4Q				
Automatic Dependent Surveillance-Broadcast (ADS-B/CID)				2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q