

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

BUDGET ACTIVITY

6 - Management support

PE NUMBER AND TITLE

0605326A - Concepts Experimentation

COST (In Thousands)		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
Total Program Element (PE) Cost		23330	30704	22727	16739	15997	22232	22013
308	CONCEPTS EXPERIMENTATION	15889	13984	7901	9106	9464	10216	10572
312	ARMY/JOINT EXPERIMENTATION	4416	13678	12058	4928	3736	10973	10387
33B	SOLDIER-CENTERED ANALYSES FOR THE OBJECTIVE FORCE	3025	3042	2768	2705	2797	1043	1054

A. Mission Description and Budget Item Justification: This program sustains and advances the Army's vision for designing the Future Force through operationally focused military experimentation as presented in the Army Transformation-Concept Development and Experimentation Campaign Plan (AT-CDEP) and is predominant for risk mitigation for the future. This is an analytically designed, integrated and synchronized program of small through large scale experimentation using multiple live, virtual and constructive venues to efficiently provide validation and quantifiable data supporting the development of required capabilities across the domains of doctrine, organization, training, materiel, leader development, personnel and facilities (DOTMLPF). The Army will use experimentation as the central focus to refine and mature warfighting concepts, and identify and validate critical decisions related to concept-based required DOTMLPF capabilities (consistent with the Joint Capability Integration and Development System). The CSA designated TRADOC as the executive agent and is the key decision-maker in experiment design and execution.

The resources in this program element supports experimentation functions to include: developmental experiments addressing specific study areas and issues directly supporting concept refinement and development of required capabilities based on Future Force concepts; integrating experiments to ensure the complex family of systems and concepts that comprise the future force are fully integrated across proponents, across DOTMLPF domains, and within service/joint contexts; capstone experiments at the end of major AT-CDEP phases to demonstrate future force capabilities for the joint warfighter; collaborative environments for simulation and experimentation; analysis; program management; Army participation in joint/sister service experimentation and incremental funding for sustaining battle lab experimentation.

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<u>B. Program Change Summary</u>	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004)	23564	26473	27121
Current Budget (FY 2005 PB)	23330	30704	22727
Total Adjustments	-234	4231	-4394
Congressional program reductions		-270	
Congressional rescissions			
Congressional increases		5250	
Reprogrammings	-234	-749	
SBIR/STTR Transfer			
Adjustments to Budget Years			-4394

Change Summary Explanation: Funding: FY 2005 - Funds realigned to support higher priority programs (-4394).

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PROJECT
308

COST (In Thousands)		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
308	CONCEPTS EXPERIMENTATION	15889	13984	7901	9106	9464	10216	10572

A. Mission Description and Budget Item Justification: This program supports the Future Force. Resources will provide for the development of the Live-Virtual-Constructive linkages and integration to the joint simulation infrastructure which supports the Secretary of Defense mandated use of human-in-the-loop war gaming with both constructive and live force elements in support of FY05-08 Army experimentation efforts (Phase I of the AT-CDEP) focused on enabling fielding of initial Future Force capability by 2010, establishing the Unit of Action and essential Unit of Employment capabilities. This will be accomplished through a number of focused developmental experiments enabling annual integrating experiments, culminating in an FY08 capstone experiment. Army experimentation will also support Joint CD&E, including participation in the Standing Joint Force Headquarters (SJFHQ) prototype pathway.

<u>Accomplishments/Planned Program</u>	FY 2003	FY 2004	FY 2005
Unit of Action Close Fight Operations Experiment	2380	0	0
Unit of Action Tactical Operations Experiment	3083	0	0
Unit of Action Non-Line-of-Sight Support Operations Experiment	1686	0	0
Unit of Action Air-Ground Mobility Experiment	502	0	0
Maneuver Support Experiment	530	0	0
Unit of Action Sustainment Experiment	1350	0	0
Mounted Maneuver Battle Lab Experimentation to Fund Cooperative and Collaborative Research Program with Kentucky Universities	1973	0	0
Unit of Action Battle Command Experiment	2313	2505	0
Unit of Employment Concept Experiments	0	5313	0
Joint Urban Operations Experiment	0	500	0
Specific FY 05 requirements to be determined by the FY 05 Experimentation Planning Conference scheduled for summer 04.	0	0	7901
Mobility and Intelligent Munitions Experiment	700	0	0
Battle Lab Collaborative Simulation Environment	1227	0	0
Combat Service Support Modeling and Simulation (CSS M&S)	145	0	0
Technology Management and Collaboration Initiative (Congressional add)	0	5250	0
Small Business Innovative Research/Small Business Technology Transfer Programs	0	416	0

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605326A - Concepts Experimentation		PROJECT 308
<u>Accomplishments/Planned Program (continued)</u>		FY 2003	FY 2004	FY 2005
Totals		15889	13984	7901

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PROJECT

312

COST (In Thousands)

FY 2003

Actual

FY 2004

Estimate

FY 2005

Estimate

FY 2006

Estimate

FY 2007

Estimate

FY 2008

Estimate

FY 2009

Estimate

312 ARMY/JOINT EXPERIMENTATION

4416

13678

12058

4928

3736

10973

10387

A. Mission Description and Budget Item Justification: This project supports experimentation to develop actionable recommendations in support of key decisions based on analytically rigorous underpinnings to yield the right set of integrated capabilities to enable the Future Force. The Army employs four categories of experiments: Developmental, Integrating, Capstone, or Exploratory. These reflect both different levels of anticipated and unanticipated results and differing levels of scope from single functional area/operational theme, to integrating across multiple functional areas and operational themes. All experiments are executed within a joint context and are conducted using approved scenarios and validated environmental, behavioral, and performance data. This project also supports costs to accomplish Army-unique objectives during Army participation in Joint and Service experiments.

In accordance with the Army Transformation Concept Development and Experimentation Plan (AT-CDEP), FY 04-08 experimentation focuses on setting the conditions for achieving Future Force capability this decade. The initial focus is at the tactical level to rapidly develop the Future Combat System (FCS) equipped Unit of Action (UA) as described in the UA Operational and Organization Plan and FCS Family of Systems Operational Requirements Document (CCD). As the experimentation campaign progresses, the focus shifts to the operational and strategic levels to refine the operational Unit of Employment (UE) concept and a broad range of functional concepts affecting the way we execute doctrine, build organizations and conduct training and leader development such as Battle Command, Maneuver Support, Maneuver Sustainment, Fires and Effects, and Aviation. FY 09-15 experimentation will continue UA and FCS development but is focused on establishing the UE and its associated pooled capabilities. This phase also addresses joint integration across the entire force, to include future and current force capabilities.

<u>Accomplishments/Planned Program</u>	FY 2003	FY 2004	FY 2005
Communications Realism in Experimentation	230	0	0
Battle Lab Collaborative Simulation Environment (BLCSE) technical integrator for modeling and simulation	200	0	0
Modeling and Simulation Capability for Combat Service Support	145	0	0
Battle Lab Collaborative Simulation Environment (BLCSE)	1757	52	0
Standing Joint Force Headquarters	2084	0	0
Network and Distributed Common Ground Station - Army (DCGS-A) Intelligence, Surveillance and Reconnaissance Experiment	0	1695	0
Network Operations Tools and Functions Experiment	0	1000	0

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PROJECT

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Accomplishments/Planned Program (continued)

	FY 2003	FY 2004	FY 2005
Unit of Employment Computer Assisted Map Exercise	0	1000	0
Enabling Networked Freedom of Maneuver Experiment	0	1000	0
Army Airspace Command and Control Experiment	0	1000	0
Battle Command Integrating Experiment	0	7524	0
Specific FY 05 requirements to be determined by the FY 05 Experimentation Conference scheduled for summer 04.	0	0	12058
Small Business Innovative Research/Small Business Technology Transfer Programs	0	407	0
Totals	4416	13678	12058

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)					February 2004			
BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605326A - Concepts Experimentation			PROJECT 33B			
COST (In Thousands)		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
33B	SOLDIER-CENTERED ANALYSES FOR THE OBJECTIVE FORCE	3025	3042	2768	2705	2797	1043	1054
<p>A. Mission Description and Budget Item Justification: This project will provide early application of human performance and human figure modeling tools in the development of soldier-focused requirements to shape technology for Army Transformation. Design analyses, constructive simulations and soldier-in-the-loop assessments will ensure that manpower requirements, workload and skill demands are considered, avoid information and physical task overloads, and take optimum advantage of aptitudes, individual and collective training, and numbers of soldiers for an affordable Future Force. Work is performed by the Army Research Laboratory (ARL). This system supports the Current to Future transition path of the Transformation Campaign Plan (TCP).</p>								
<p>Accomplishments/Planned Program</p> <p>Provide Human Factors Engineering and Manpower and Personnel Integration (MANPRINT) support to Training and Doctrine Command (TRADOC) Centers, Schools and Battle Laboratories. In FY03, performed and transitioned 15 MANPRINT assessments (MA), 14 human factors engineering assessments (HFEA), 4 manpower, personnel, training (MPT) assessments, and 3 soldier survivability (SSv) assessments. Analyzed manpower impacts of maintenance automation and addressed potential impacts of diagnostic shortfalls. In FY04, improve and enhance fidelity of models to predict materiel readiness with direct application to support maintenance manpower estimates for the Future Combat System (FCS) equipped Unit of Action (UoA). In FY05, continue to conduct and improve HFEA, MA, MPT, and SSv assessment processes</p>					FY 2003 1725	FY 2004 1675	FY 2005 1468	

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
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<u>Accomplishments/Planned Program (continued)</u>		FY 2003	FY 2004	FY 2005
Provide dedicated modeling and analysis cell for early and accurate MANPRINT estimates to Army Materiel Command (AMC), AMC Research, Development, and Engineering Centers (RDECs), TRADOC Centers, Schools and Battle Laboratories, Army Test and Evaluation Command (ATEC) and other service laboratories. Established the Future Combat System Human Dimension IPT to include soldier performance considerations in FCS analyses, modeling, simulation, and testing. Analyses provided essential soldier performance and Command and Control (C2) systems information for platform design. Determined the optimal number of FCS Mobile Combat System (MCS) crew and best allocation of tasks using task network modeling. As a result, the UoA Operations and Organizations (O&O) and FCS Operational Requirements Document (ORD) revised the MCS crew from 2 to 3. In FY04, continue to improve and transition MANPRINT tools to the acquisition and Test &Evaluation communities. In FY05, consolidate human system integration measures, methods, and modeling approaches for a common set of definitions for evaluating human-dependent systems.		1300	1300	1300
Small Business Innovative Research/Small Business Technology Transfer Programs		0	67	0
Totals		3025	3042	2768