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Exhibit R-2 RDT&E Project Justification (Fiscal Year 2005 Budget Estimates)								February 2004	
APPROPRIATION0/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE			
RDT&E/Defense-Wide/BA 3						Joint Warfighting Program, PE 0603727D8Z			
COST (In Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Cost
Total Program Element (PE) Cost	8.850	10.284	9.936	10.268	10.514	10.958	11.204	Continue	Continue
Joint Warfighting/P727	8.850	10.284	9.936	10.268	10.514	10.958	11.204	Continue	Continue

A. Mission Description and Budget Item Justification

In May 1998 the Secretary of Defense appointed U.S. Joint Forces Command (formerly the U.S. Atlantic Command), as the Defense Department's Executive Agent for Joint Experimentation. Subsequently, the Department realigned resources to support the Joint Forces Command's new role. In FY 1999 funds from this JWP Program Element (PE: 0603727D8Z) were redirected to support the initial stand-up of Joint Forces Command's Joint Experimentation Directorate. Funding for joint experiments was transferred to Joint Forces Command through the Navy and PE 0603727N in FY 2000 and was established to provide Joint Forces Command with its own funding source. Funding to support the Joint Advanced Warfighting Program (JAWP) concept development, the Information Technology Backplane (ITB), and Technology Feeder Support (TFS) for joint experimentation was retained in the JWP PE. The DoD Adaptive Red Team (DART) was initiated as a pilot project in FY 2002. DART has proven to be very successful by providing an independent team of experts to challenge emerging operational concepts from their origin through the experimentation process. It has been continued as a key element of the Joint Warfighting Program starting in FY 2003.

The Joint Warfighting PE supports four related activities: the JAWP, the ITB, DART and TFS for Joint Experimentation. While these activities strongly support Joint Forces Command's joint experimentation efforts, a separate program element has been retained since the activities support

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other organizations in addition to Joint Forces Command, and they require a degree of independence from Joint Forces Command to function as envisioned.

The JAWP was established by the Office of the Secretary of Defense (OSD), with the support of the Vice Chairman of the Joint Chiefs, to serve as a catalyst for innovation and change. This program's focus is on assisting in the formulation and assessment of advanced concepts and capabilities, plus identifying enabling technologies and integration options for the Department. These concepts drive changes in the doctrine, organization, training and education, materiel, leadership and facilities (DOTMLF) of the Services. The JAWP serves an essential independent role in identifying, exploring and evaluating breakthrough war fighting capabilities. It helps capture and builds on lessons learned from joint contingency operations and earlier joint and Service experimentation. From that foundation, it identifies and helps formulate breakthrough joint concepts, explores their effectiveness by designing and conducting joint experiments, and helps streamline implementation processes. Its work complements and supports the activities of Joint Forces Command, the Joint Staff, and the OSD by providing a uniquely informed independent source of advice. In identifying and elaborating innovative joint concepts and capabilities and associated enabling technologies, the JAWP helps integrate related Service efforts and those of Combatant Commanders and Defense agencies. Through its influence in a wide range of DoD transformation efforts, the JAWP promotes integration, bringing greater coherence to efforts that would otherwise be tangential or disconnected. The JAWP is composed of both civilian and military members. Its military component is the JAWP Analytical Project Office (JAWP-APO), a jointly manned activity established by the Deputy Secretary of Defense, consisting of equal numbers of military personnel from all four Services. The active duty military members provide a current operational perspective to concepts under investigation and serve as a vital link to ongoing relevant activities in the Services.

The ITB provides an advanced network infrastructure that extends commercial capabilities to meet JV2020 needs. Information Superiority is a key JV2020 building block and the ITB provides

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the means to experiment with the digital transmission capabilities that are projected to be available five years (from each funding year). The ITB is not a new physical network. It is a virtual network that capitalizes on existing physical networks such as the Defense Information Systems Network (DISN), the DISN Asynchronous Transfer Mode Service Network (DATMS), the Defense Research and Engineering Network (DREN), and the experimental Advanced Technology Demonstration Network (ATDnet). The ITB has many users from sites served by existing networks but the funding included in this PE is the incremental funding needed to support joint experimentation. For example, this PE provides the circuit costs to extend the ITB from the experimentation site to the nearest point on the backplane (where no other network exists), and only the "extra" backplane costs generated by the Joint Warfighting Experiments. Since joint experiments are very dependent on advanced distributed simulation, or on limited, live, command post exercises that are being driven by simulations, a robust high-performance network is needed to interconnect the various sites. These simulations press the state of the art in networking capability, including that of requiring high-bandwidth, low-latency Type-I encryption for protected communications. The ITB also supports new bandwidth-intensive applications such as video teleconferencing, high definition television and large file transfers.

The third effort supported by this PE is TFS for joint experiments. There are many Technology Demonstrations (TDs), Advanced Technology Demonstrations (ATDs), and Advanced Concept Technology Demonstrations (ACTDs) that can provide advanced technologies to support joint experiments. For example, the Joint Staff has prepared 72 desired operational capabilities based on JV2020 concepts and 21st Century Challenges. For each Challenge, the Joint Staff has prepared roadmaps that provide opportunities to assess each Challenge. The roadmap for the battlefield awareness challenge shows 42 ACTDs that have the potential to demonstrate some aspect of a desired operational capability supporting battlefield awareness. This effort provides technology managers the resources to expand the scope of a test or demonstration to collect data for the joint staff or JFCOM, thereby leveraging the OSD and Service ACTD investment. The Technology Feeder Support effort was used to initiate a Red Team Pilot Project (DoD Adaptive Red Team - DART) for Joint Forces Command. The DART participated in Joint Forces Command Concept Development and

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Experimentation to provide an independent assessment that will ensure that product quality stays high and credible. This source of funding, which is separate from other Joint Forces Experimentation funding, will provide the necessary independence.

The DART has been established as a separate project starting with the FY2003 budget. The DART has assisted USJFCOM in the preparation for MILLENNIUM CHALLENGE 2002 and assisted United States Central Command (USCENTCOM) and United States South Command (USSOCOM) in preparation for real world operations in Operation Enduring Freedom. It will continue to provide an independent source of Red Teaming expertise to challenge operational concept development from their origin through experimentation and into execution.

B. Program Change Summary

PE: 0603727D8Z	FY 2003	FY 2004	FY 2005
Previous President's Budget	9.296	9.685	9.948
Current FY 2005 President's Budget	8.850	10.284	9.936
Total Adjustments:	-.446	.599	.012
Congressional Program Reductions			
Congressional rescissions			
Congressional increases		.750	
Reprogrammings			
SBIR/SSTR Transfer			
Other	-.446	.750	.012

C. Other Program Funding Summary: N/A

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A. Mission Description and Budget Item Justification

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B. Program Accomplishments and Plans:

	FY 2003	FY 2004	FY 2005
Joint Advanced Warfighting Program (JAWP)	4.500	4.500	4.635

- FY 2003** - In February 2003, the JAWP's role in transformation was abruptly expanded. The Commander Joint Forces Command requested the JAWP's participation in the identification, collection, and analysis of operational-level joint lessons during Operation Iraqi Freedom (OIF). That role, initially intended to last only 90 days to help JFCOM during the war, was subsequently extended through FY04. Within 10 days of alert, the JAWP deployed 9 of its military members to joint headquarters throughout Southwest Asia and JAWP's senior military officer, BG Cone, led the JFCOM/JAWP joint lessons learned team, totaling over 50 people throughout the

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remainder of the FY, reporting jointly to Commander, US Central Command and Commander, US Joint Forces Command. Throughout the war, other members of the JAWP participated in the collection of lessons at joint deployment, sustainment, mobilization, targeting, intelligence, and information operations activities in CONUS and analyzing emerging lessons at JFCOM's Suffolk facilities. These efforts resulted in BG Cone briefing the President, Vice President, Secretary of Defense, Chairman of the Joint Chiefs of Staff, all Service Chiefs, and most Combatant Commanders on salient lessons. At the Secretary's direction, the effort continued after the war to identify, collect, and analyze lessons from post-major combat operations in Iraq. Five of the JAWP's members, including 3 civilians, deployed to Iraq for varying periods beginning in August 2003 while others continued supporting the effort at Suffolk and Alexandria. Although the lessons learned effort consumed most of the JAWP's resources for 10 months, the JAWP still managed to help JFCOM assume the Joint Urban Operations Executive Agent role, design and coordinate a major urban-centered human-in-the-loop experiment, develop a draft joint urban operations master plan, develop joint urban operations concepts used during OIF, provide advice on language for the Defense Planning Guidance and Transformation Planning Guidance, initiate work on streamlining implementation, and provide advice on issues for the next Unified Command Plan review.

- **FY 2004** -The JAWP will continue to support JFCOM's Joint Center for Lessons Learned by identifying and collecting lessons from the Global War on Terrorism. To do so, the JAWP will conduct the collection and analysis effort from OSD, the Joint Staff, the Intelligence community, and the departments of State and Justice. It will also coordinate and help integrate the overall global lessons learned effort from a JAWP-led cell at Headquarters SOCOM and a JAWP-led analysis cell at JFCOM. That effort will continue throughout the FY and will involve more than two thirds of the JAWP's resources. JAWP will also lead and help man JFCOM's Joint Urban Resolve Experiment. The experiment will explore joint command and control organization; integration of manned and unmanned capabilities for reconnaissance and combat applications; and innovative ways to overcome opponents' protective measures in an urban environment.

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Vulnerability assessments and "Red Teaming" will be conducted to improve the experiment's validity and robustness. A complementary effort for OSD AS&C will identify opportunities to leverage and integrate Service, allied and other agency programs. The latter effort will help integrate the independent joint command and control initiatives of United States Pacific Command (USPACOM), USCENTCOM, JFCOM, and Service command and control capabilities to help attain the Secretary's objective of establishing a more standardized and responsive joint command and control structure worldwide. A component of the task is to help identify and exploit opportunities facilitating the early transition of new concepts and technologies to operational capabilities. JAWP will conclude its support for JFCOM in its assumption of duties as DoD's Executive Agent for Joint Urban Operations in 2Q04 and concurrently wrap up its support to OSD and the Joint Staff on the next Unified Command Plan. Finally, JAWP will lead an effort supporting OSD and the Joint Staff on developing key concepts for capabilities based planning.

- **FY 2005** - Will continue support of the Department's transformation objectives through joint experimentation and joint concept development. Specifically, the JAWP will continue its Urban Resolve experiment and initiate a continuing experiment extending through FY06 to exploit insights gained from earlier experimentation. It will concurrently help identify an implementation path for a worldwide joint command and control structure emphasizing the creation of standing Joint Force Headquarters as the command and control foundation on which future joint operations will be based.

	FY 2003	FY 2004	FY 2005
Information Technology Backplane (ITB)	1.400	1.500	1.545

- **FY 2003** - The ITB support for wide-area network connectivity for joint warfighting experimentation will continue, as will the ongoing task of transitioning emerging technology from advanced research network test beds. Information assurance and other security technologies

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will continue to be developed, tested and deployed. Efforts to use multicast and net-flow monitoring and analysis to determine and map traffic-flow prioritization to WAN QoS will begin. Deployment of high-quality, low-latency video teleconferencing and collaboration will continue. Efforts in support of JFCOM, FBE and ad-hoc experimentation will continue including supporting JFCOM's goal of bringing supercomputer assets to bear on M&S problems and providing an ongoing set of events through their Continuous Experiment Environment (CEE). Assistance will be given to the planning and execution of Pinnacle Impact '03 and planning of Pinnacle Vision '04 (formerly Olympic Challenge '04) Connectivity to key sites will continue with selected circuits and equipment upgraded as required.

- **FY 2004** - The ITB support for wide-area network connectivity for joint warfighting experimentation will continue, as will the ongoing task of transitioning emerging technology from advanced research network test beds. Information assurance and other security technologies will continue to be developed, tested and deployed. Multicast and net-flow monitoring and analysis tools which determine and map traffic-flow prioritization to WAN QoS will be fielded. Efforts in support of JFCOM, FBE and ad-hoc experimentation will continue including JFCOM's Continuous Experiment Environment (CEE). Assistance will be given to the planning and execution of Pinnacle Vision '04 (formerly Olympic Challenge '04). Connectivity to key sites will continue with selected circuits and equipment upgraded as required.
- **FY 2005** - The ITB support for wide-area network connectivity for joint warfighting experimentation will continue, as will the ongoing task of transitioning emerging technology from advanced research network test beds. Information assurance and other security technologies will continue to be developed, tested and deployed. Efforts in support of JFCOM, FBE and ad-hoc experimentation will continue. Assistance will be given to the planning and execution of Pinnacle Challenge '05 (since this is a major DoD effort, this will require significant resources). Connectivity to key sites will continue with selected circuits and equipment upgraded as required.

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	FY 2003	FY 2004	FY 2005
Technology Feeder Support (TFS)	0.950	1.034	1.065

- **FY 2003** - The primary effort of this project in FY 2003 was the enhancement of Joint Experimentation efforts in US Pacific Command. TFS funding was used to accelerate PACOM experimentation efforts in Information Flow Analysis & Control, Joint Enroute Mission Planning and Rehearsal System, Theater Effects Based Operations, PACOM Standing Joint Force HQ Development, Deployable Joint Command & Control Theater Validation and JTF WARNET experimentation. This was done by funding the major experimental series of events in PACOM which center around the periodic C2X experiments which focus on all of the above operational concepts and prototypes. With no independent funding for experimentation initiatives, PACOM would be unable to move forward on these important initiatives without OSD funding. With the assistance of this funding, PACOM was able to make important progress in each of the experimentation areas described above and maintain its momentum as a leader in defense transformation.
- **FY 2004** - The major effort planned for support by the TFS project will be to ensure that technology applications (ACTDs /ATDs) are injected into Pinnacle Vision 2004. It is anticipated that the major foci of the 2004 joint experiment will be on Standing Joint Force Headquarters and Theater Effects Based Operations so significant effort will be applied to ensure that appropriate technologies to support these operational concepts will be available to enhance this experiment. The support of combatant commander (other than JFCOM) experimentation will continue.
- **FY 2005** - The major effort planned for support by the TFS project will be to ensure that technology applications (ACTDs /ATDs) are injected into FY05 experiments conducted by JFCOM and

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other combatant commanders. It is anticipated that implementation of the Standing Joint Forces Headquarters and other Transformation efforts will continue to be the focus of experimentation efforts. Technology resources will be focused to support this effort. The support of combatant commander (other than JFCOM) experimentation will continue.

	FY 2003	FY 2004	FY 2005
DoD Adaptive Red Team (DART)	2.000	2.500	2.691

- **FY 2003** - DART is established as a separate project because of its significant success as a pilot project. DART will assist JFCOM in concept development of the Standing Joint Force Headquarters in preparation for future joint experiments. DART will also assist in the red teaming of counter terrorism experimentation and JAWP's Future Joint Force II Experiment. DART will also assist other combatant commanders in the development, execution and red teaming of joint experimentation to be conducted by those commands. DART will also assist senior departmental leadership in red teaming any operational concepts for potential real world operations to be conducted in 2003. DART will also devise a Code of Best Practices for red teaming to assist the entire Department in improving the red teaming process.
- **FY 2004** - DART will continue to react to inputs from a Senior Advisory Group, DART has begun to shift its emphasis away from Joint Forces Command to supporting Combat Command (COCOM) requirements. Examples include extensive involvement with PACOM's Counter-Bio program, a biological defense initiative; Red Teaming SOUTHCOM's anti-FARC operations; and support for NORTHCOM's exercise program. Ongoing, albeit reduced levels of participation with JFCOM include Red Teaming the OIF After-action Report, and reviewing strategies for Capabilities Based Planning. DART continues to directly support AS&C with activities relating to Counter-

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Bomber 2 and Active Denial ACTD programs. Finally, DART published five Code of Best Practices documents with three more in the works.

- FY 2005** - DART will continue to support PACOM, SOUTHCOM, and NORTHCOM will expand to include EUCOM (defining requirements above the Corps level), US Forces Korea (an expansion of Counter-Bio to include employment Bio-defense considerations); and STRATCOM (assisting in establishing an internal RED TEAM). Urban Operations support to JFCOM is envisioned along with other activities as needed. ACTD support will continue. Valuable technical, as well as employment and deployment considerations are invaluable in refining the residual products for AS&C. Best practices and Senior Advisory Group activities will continue. Finally, interaction with DoD Intelligence, looking critically at how certain products are produced will institute another inter-agency relationship inside DoD.

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	FY 2004	
Congressional Plus Up (JFCOM Rapid Database Development)	0.750	

- FY 2004** - The Rapid Distributed Database Development (RD3) is a critical element in creating a Joint, National Training Capability, which allows Joint Force Commanders and their components to employ Live, Virtual and Constructive Simulations to support Regional Combatant Commanders' (RCC) operational and training requirements for mission relevant planning, training and mission rehearsal. This capability will also support US Joint Forces Command's requirement to perform Joint Training and Joint Experimentation. This project focuses on the definition, design, development, and integration of a systems approach to collecting, manipulating, storing, and retrieving mission relevant data in a usable form to support anticipated future Joint and service requirements for mission planning, training, mission rehearsal, and experimentation. The intent of RD3 is to reduce the development time for live, virtual and constructive simulation, C4 and other databases in support of Joint requirements for conducting mission planning, joint training, mission rehearsal, and joint experimentation events in accordance with the Joint National Training Capability concept. These requirements were validated by the RCCs and Services during the NOV 03 Joint Training Requirements Group, which stipulated the need for training systems flexible enough to support the rapid, reactive planning and rehearsal for real world operations.