Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 3: *Advanced Technology Development (ATD)*				R-1 ITEM NOMENCLATURE PE 0603942D8Z: *Technology Transfer and Transition*							
COST ($ in Millions)	**FY 2009 Actual**	**FY 2010 Estimate**	**FY 2011 Base Estimate**	**FY 2011 OCO Estimate**	**FY 2011 Total Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
Total Program Element	6.033	13.558	23.310	0.000	23.310	20.951	21.082	13.755	14.718	Continuing	Continuing
P942: *Technology Transfer*	6.033	13.558	2.153	0.000	2.153	2.162	2.182	2.218	2.258	Continuing	Continuing
P949: *Technology Transition Initiative*	0.000	0.000	21.157	0.000	21.157	18.789	18.900	11.537	12.460	Continuing	Continuing

Note

FY 2011 and out reflect realignment of resources from the following program element into Technology Transfer and Transition to benefit management communications, fiscal tracking, budget justification and overall program resource management of Transfer/Transition efforts:

PE 0603826D8Z Quick Reactions Special Projects, Technology Transition Initiative (Transfer into P949).

A. Mission Description and Budget Item Justification

The Technology Transfer and Transition (TT&T) program (Program Element 0603942D8Z) has two sub-elements: the Technology Transfer program (P942), and Technology Transition Initiative (P949).

Defense Technology Transfer (P942) was referred to in previous budgets as Defense Technology Link (TechLink). This change serves to distinguish the Technology Transfer program from one of the program's successful contractors, TechLink of Montana State University. Defense Technology Transfer's three-fold mission is (1) integration of advanced commercial-sector technologies into Defartment of Defense (DoD) systems, particularly from nontraditional defense contractors; (2) spin-off of DoD-developed technologies to industry for product development and to make these technologies available for military acquisition; and (3) establishment of collaborative Research and Development (R&D) projects with the private sector for cost-sharing of new dual-use technology development.

Defense Technology Transfer has been highly successful at helping the Department transfer its technologies to U.S. companies, and making these technologies available for both military and commercial applications. Technology Transfer is highly cost-effective with elements achieving significant Return on Investment (ROI) to DoD. For example, TechLink and has provided a ROI to DoD of 4:1 on funds expended to date. This efficiently run organization currently accounts for 50 percent of all DoD patent license agreements (PLA) and has brokered over 450 Cooperative Research and Development Agreements (CRADA) and other R&D partnerships involving innovative companies new to DoD.

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Beginning in FY 2004, Congress has appropriated funds for an activity identified as MilTech to provide DoD with a manufacturing technical assistance capability for small and mid-size companies in areas such as improved product design, manufacturability, establishing reliable supply chain relationships, and achieving production sustainability in ramping up to meet critical DoD needs. MilTech works hands-on with DoD Program Managers and these companies to achieve accelerated deliverable product outcomes for military use. MilTech design or design review assistance to DoD Program Managers have resulted in up to 50% reductions in product development lead times. Manufacturing technical assistance has led to improved on-time delivery, thereby reducing shipping delays and back orders of critical items by as much as 50-70%. MilTech assistance in providing design best practices early on in the product development process is helping companies reduce product costs by 10-30% and improved quality of design is reducing pre-shipping and field failures by 10-30%.

The Technology Transition Initiative (P949), authorized by Title 10 and Section 215 of the FY2003 Defense Authorization Act, facilitates the rapid transition of new technologies from the DoD science and technology (S&T) base into DoD acquisition programs. The program addresses the funding gaps that exist between the time a mature technology is demonstrated and the time it can be funded and procured for use in an intended weapons system or operational capability for the warfighter. The Technology Transition Initiative (TTI) program is mandated by Congress and receives high congressional interest.

Since the program inception in FY 2003, 75 projects have been initiated and 37 are complete. Of the 37 completed projects, 27 (73%) have successfully transitioned to DoD Acquisition Programs of Record or procurement contracts for operational use and subsequent fielding; exceeding the objective of 30% for demonstration programs (Strategic Objective 4-3, Office of the Under Secretary of Defense, Acquisition, Technology & Logistics (OUSD (AT&L). Technology Transition Initiative (TTI) projects are selected by the Technology Transition Manager (DDR&E Research Directorate) in consultation with representatives of the Technology Transition Council (TTC). (The TTC is comprised of the Acquisition and S&T executives from each Service and Defense Agency and representatives from the Joint Requirements Oversight Council (JROC.) The call for TTI proposals is distributed to the DoD Services and Agencies through the Technology Transition Working Group (TTWG) members, designated by the TTC. The TTWG members receive proposals from their Service/Defense Agency S&T base, conduct a prioritization based on Joint, Service or Agency capabilities needed and submit them to the Office Secretary of Defense (OSD) TTI Program Manager. The Technology Manager's senior staff consolidates the proposal submissions, evaluates the Service/Agency recommendations, reviews new start selection options based on available resources, and prepares a recommended new start selection list to the Technology Transition Manager for funding. The Technology Transition Manager selects the highest priority proposals for funding.

The OSD FY 2011 proposal call memo will be signed out by the Technology Transition Manager in February 2010, requesting the Services, Agencies and Combatant Commands provide their prioritized inputs by April. OSD is looking for candidate proposals that demonstrate a strong commitment from the operational and acquisition communities to transition improved capabilities to operational use or an acquisition program of record. These proposals are being evaluated against the following evaluation criteria: TTI funding must accelerate product transition, the technology must be from the DoD Science and Technology (S&T) base, Component cost sharing to leverage funding, project duration less than four years, established exit criteria, potential for joint use, value to the warfighter, sufficient technology maturity, and commitment to transition/acquisition. Final selection of FY 2011 TTI new start projects will be determined in the August 2010 timeframe. A listing of initiatives under review for selection by OSD can be provided to congressional staff members during the budget review.

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense	DATE: February 2010
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B. Program Change Summary ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	2.171	2.219	0.000	0.000	0.000
Current President's Budget	6.033	13.558	23.310	0.000	23.310
Total Adjustments	3.862	11.339	23.310	0.000	23.310
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-0.111			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.414	0.000			
• SBIR/STTR Transfer	-0.152	0.000			
• Funding Realignment of Technology Transition Initiative	0.000	0.000	23.310	0.000	23.310
• R&DFY09: Congressional Distributed Actions	3.600	0.000	0.000	0.000	0.000
• FY10 Congressional Adjustment	0.000	11.450	0.000	0.000	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)

	FY 2009	FY 2010
Project: P942: *Technology Transfer*		
Congressional Add: *FirstLink*	1.989	2.400
Congressional Add: *MilTech Expansion Program*	1.591	1.600
Congressional Add: *Center for Innovation at Arlington*	0.000	2.700
Congressional Add: *National Radio Frequency Research*	0.000	4.000
Congressional Add: *Program Increase*	0.000	0.750
Congressional Add Subtotals for Project: P942	3.580	11.450
Congressional Add Totals for all Projects	3.580	11.450

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense	DATE: February 2010
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Change Summary Explanation

FY 2011 and out reflect realignment of resources from the following program element into Technology Transfer and Transition to benefit aligned management communications, fiscal tracking, budget justification and overall program resource management of Transfer/Transition efforts.

PE 0603826D8Z Quick Reactions Special Projects, Technology Transition Initiative (Transfer into P949).

Exhibit R-2A, RDT&E Project Justification: PB 2011 Office of Secretary Of Defense			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 3: *Advanced Technology Development (ATD)*	R-1 ITEM NOMENCLATURE PE 0603942D8Z: *Technology Transfer and Transition*	PROJECT P942: *Technology Transfer*	

COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
P942: *Technology Transfer*	6.033	13.558	2.153	0.000	2.153	2.162	2.182	2.218	2.258	Continuing	Continuing

A. Mission Description and Budget Item Justification

Defense Technology Transfer was referred to in previous budgets as Defense Technology Link (TechLink). This change serves to distinguish the Technology Transfer program from one of the program's successful contractors, TechLink of Montana State University.

Defense Technology Transfer is an element in the Department's technology transfer, transition, and acquisition activities. Its three-fold mission is (1) integration of advanced commercial-sector technologies into Department of Defense (DoD) systems, particularly from nontraditional defense contractors; (2) spin-off of DoD-developed technologies to industry to make these technologies available for military acquisition; and (3) establishment of collaborative Research & Development (R&D) projects with the private sector for cost-sharing of new dual-use technology development.

Defense Technology Transfer has been highly successful at helping the Department transfer its technologies to U.S. companies, and first responders making these technologies available for both military and commercial applications.

Technology Transfer is highly cost-effective with elements achieving significant Return on Investment (ROI) to DoD. For example, TechLink and has provided a ROI to DoD of 4:1 on funds expended to date. This efficiently run organization currently accounts for 50 percent of all DoD patent license agreements (PLA) and has brokered over 450 Cooperative Research and Development Agreements (CRADA) and other R&D partnerships involving innovative companies new to DoD.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Marketing of DoD technologies	1.472	1.209	1.270	0.000	1.270
Actively market DoD-developed technologies to US companies to establish Patent License Agreements to commercialize these technologies for both civilian and military applications. The multiple objectives of this technology marketing activity are to (1) accelerate the transition of DoD-developed technologies to the warfighter; (2) lower the cost of DoD technology acquisition by developing a larger commercial					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Office of Secretary Of Defense		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 3: *Advanced Technology Development (ATD)*	R-1 ITEM NOMENCLATURE PE 0603942D8Z: *Technology Transfer and Transition*	PROJECT P942: *Technology Transfer*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
market for dual-use technologies; (3) provide a return of revenue to DoD labs from commercial spin-off of defense technologies; and (4) fulfill DoD's Congressionally mandated technology transfer directives. *FY 2009 Accomplishments:* Actively marketed DoD-developed technologies to US companies to establish Patent License Agreements to commercialize these technologies for both civilian and military applications. As an example, TechLink (Montana Status University), the Technology Transfer contractor, facilitated two licensing agreements for a revolutionary new Navy-developed corrosion prevention compound known as "Navguard." Developed by the Naval Air Systems Command - Patuxent River, this technology promises to save the DoD millions of dollars annually in its corrosion prevention on military air frames, ships, and ground vehicles. TechLink marketed Navguard nationally. Two companies decided to license the technology for commercialization: Armick, Inc. of Kentwood, MI - who offers contract cleaning and corrosion-control services for military and civilian aircraft; and Corrosion Technologies Corporation of Dallas, TX - who offers a full line of rust and corrosion control products for military, defense industry, and other customers *FY 2010 Plans:* Continue active marketing of DoD-developed technologies to US companies to establish Patent License Agreements to commercialize these technologies for both civilian and military applications. The multiple objectives of this technology marketing activity are to (1) accelerate the transition of DoD-developed technologies to the warfighter; (2) lower the cost of DoD technology acquisition by developing a larger commercial market for dual-use technologies; (3) provide a return of revenue to DoD labs from commercial spin-off of defense technologies; and (4) fulfill DoD's Congressionally mandated technology transfer directives.					

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: Continue active marketing of DoD-developed technologies to US companies to establish Patent License Agreements to commercialize these technologies for both civilian and military applications. The multiple objectives of this technology marketing activity are to (1) accelerate the transition of DoD-developed technologies to the warfighter; (2) lower the cost of DoD technology acquisition by developing a larger commercial market for dual-use technologies; (3) provide a return of revenue to DoD labs from commercial spin-off of defense technologies; and (4) fulfill DoD's Congressionally mandated technology transfer directives.					
Dual Use Technology Development Actively promote and broker Cooperative Research and Development Agreements (CRADAs) between DoD labs and industry for development of technology with both commercial and military applications. This activity will particularly focus on nontraditional defense contractors and is intended (1) to help lower the expense of new defense-related technology development through cost-sharing with industry, and (2) to help DoD benefit from private-sector technology investments and innovations. As an example TechLink facilitated a CRADA and a PLA between the Army Edgewood Chemical Biological Center (ECBC) and BVS, Inc. of Missoula, Montana for an advanced integrated virus screening detection system. This system can rapidly screen for a wide variety of viruses that affect humans, wildlife, and livestock such as avian influenza in chickens. The CRADA provides for BVS to contribute to development of a comprehensive viral database at ECBC. *FY 2009 Accomplishments:* Continued to actively promote and broker Cooperative Research and Development Agreements (CRADAs) between DoD labs and industry for development of technology with both commercial and military applications. Broker new CRADAs between DoD labs and industry, thereby enabling DoD and industry to leverage technology development efforts by both parties.	0.638	0.584	0.574	0.000	0.574

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: Continue to actively promote and broker Cooperative Research and Development Agreements (CRADAs) between DoD labs and industry for development of technology with both commercial and military applications. Broker new CRADAs between DoD labs and industry, thereby enabling DoD and industry to leverage technology development efforts by both parties. *FY 2011 Base Plans:* Continue to actively promote and broker Cooperative Research and Development Agreements (CRADAs) between DoD labs and industry for development of technology with both commercial and military applications. Broker new CRADAs between DoD labs and industry, thereby enabling DoD and industry to leverage technology development efforts by both parties.					
Spin-In of Advanced Commercial-Sector Technologies Actively promote the DoD Small Business Innovation Research (SBIR) (focus on Phase III contracts) and Independent Research and Development (IR&D) programs to companies throughout the United States in order to help DoD identify, fund, acquire, and integrate private-sector innovations and advanced commercial technologies into DoD systems. *FY 2009 Accomplishments:* Actively promoted the DoD Small Business Innovation Research (SBIR) (focus on Phase III contracts) and Independent Research and Development (IR&D) programs to companies throughout the United States in order to help DoD identify, fund, acquire, and integrate private-sector innovations and advanced commercial technologies into DoD systems. As an example, TenXsys, Inc. is a technology firm in Eagle, ID that specializes in networked sensor systems for biological monitoring. TechLink (Montana State University), the Technology Transfer contractor, assisted TenXsys in winning US Army Research Institute of Environmental Medicine sponsored Phase I and II SBIR awards for an advanced physiological monitoring system for amputees	0.343	0.315	0.309	0.000	0.309

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
that accelerates the rehabilitation of soldiers with prothestic devices. To help TenXsys with further development of its Phase II technology, TechLink supported TenXsys in meetings with In-Q-Tel, the Central Intelligence Agency's venture capital arm. As a result of these interactions, In-Q-Tel made a major investment in TenXsys to support development of specialized field-capable advanced telemetry technology in support of US intelligence activities. *FY 2010 Plans:* Continue to actively promote the DoD Small Business Innovation Research (SBIR) (focus on Phase III contracts) and Independent Research and Development (IR&D) programs to companies throughout the United States in order to help DoD identify, fund, acquire, and integrate private-sector innovations and advanced commercial technologies into DoD systems. *FY 2011 Base Plans:* Continue to actively promote the DoD Small Business Innovation Research (SBIR) (focus on Phase III contracts) and Independent Research and Development (IR&D) programs to companies throughout the United States in order to help DoD identify, fund, acquire, and integrate private-sector innovations and advanced commercial technologies into DoD systems.					
Accomplishments/Planned Programs Subtotals	2.453	2.108	2.153	0.000	2.153

	FY 2009	FY 2010
Congressional Add: FirstLink *FY 2009 Accomplishments:* FirstLink - a congressionally added effort - is officially called the Department of Defense's National Center of Excellence for Commercialization and Technology Transfer for First Responder Technologies.	1.989	2.400

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APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 3: *Advanced Technology Development (ATD)*	R-1 ITEM NOMENCLATURE PE 0603942D8Z: *Technology Transfer and Transition*	PROJECT P942: *Technology Transfer*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010
Accomplished: FirstLink assessed user needs and priorities, collected and evaluated potential DoD technologies for first responder use, identified non-DoD technologies that address DoD and first responder needs, and created and executed a marketing plan for these technologies. Measures of success include technologies made available for first responder use. As an example, FirstLink helped the Army to license a patent for a 'Field Expedient Bleeding Simulation Systems (FEBSS). This system was developed by an Army combat medic who worked with the Army Medical Research and Material Command to patent the technology. FirstLink facilitated a PLA and a CRADA with Skedco, Inc. of Tualatin, Oregon to complete the product engineering to take this to market. Both the U.S. military and several foreign military activities are purchasing this technology that has now been transitioned back to DoD for use. Several universities are also purchasing the unit to train civilian emergency management technicians. *FY 2010 Plans:* FirstLink - a congressionally added effort - is officially called the Department of Defense's National Center of Excellence for Commercialization and Technology Transfer for First Responder Technologies.		
Congressional Add: MilTech Expansion Program *FY 2009 Accomplishments:* MilTech Expansion is a congressionally added effort to facilitate Technology Transfer functions, focused specifically on providing critical engineering, manufacturing, and business development assistance to small companies. MilTech is a non-profit entity of Montana State University. Accomplished: Assisted the transition of technologies from innovative small companies to DoD operational use, supporting the Technology Transfer functions of marketing of DoD technologies, dual use technology deployment, and spin-in of advanced commercial-sector technologies.	1.591	1.600

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010
As as example, MilTech helped Crimson Trace Corporation, Beaverton, OR, to ruggedize and waterproof its "Lasergrips" sighting system for pistols. Squeezing the pistol grips activates an eye-safe red laser beam that indicates precisely where the pistol is pointing. This device reduces pistol training time, discourages would-be attackers, and increases lethality. SOCOM and other DoD branches asked Crimson Trace to enhance the Lasergrips by ruggedizing the switch mechanism and making the circuitry waterproof. Crimson Trace lacked the in-house expertise to undertake design modifications requested by DoD. MilTech assisted by working with a design group familiar with military specifications, and Crimson Trace selected among three design options. The result is a collaborative effort that resulted in improved technology to meet DoD needs and was applicable to civilian requirements. *FY 2010 Plans:* MilTech Expansion is a congressionally added effort to facilitate Technology Transfer functions, focused specifically on providing critical engineering, manufacturing, and business development assistance to small companies. MilTech is a non-profit entity of Montana State University.		
Congressional Add: Center for Innovation at Arlington *FY 2010 Plans:* Center for Innovation at Arlington is a congressionally added effort to facilitate Technology Transfer functions	0.000	2.700
Congressional Add: National Radio Frequency Research *FY 2010 Plans:* National Radio Frquency Research is a congressionally added effort to facilitate Technology Transfer functions	0.000	4.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010
Congressional Add: Program Increase *FY 2010 Plans:* Congressional add for program increase	0.000	0.750
Congressional Adds Subtotals	3.580	11.450

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

Not applicable for this item.

E. Performance Metrics

For FY 2009: established patent license agreements (PLAs) totaling approximately 30 percent of all DOD PLAs and assist in the brokering of over 400 Cooperative Research and Development Agreements (CRADAs)

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COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
P949: *Technology Transition Initiative*	0.000	0.000	21.157	0.000	21.157	18.789	18.900	11.537	12.460	Continuing	Continuing

Note

In FY 2011, TTI resources were transferred from Quick Reaction Special Projects (PE 0603826D8Z) to Technology Transfer and Transition (PE 0603942D8Z) as part of an effort to more effectively align interwoven program efforts that will benefit management communications, budget justification, fiscal tracking and improve overall program resource management of Transfer/Transition efforts.

A. Mission Description and Budget Item Justification

The Technology Transfer and Transition (TT&T) program (Program Element 0603942D8Z) has two sub-elements: the Technology Transfer program (P942), and Technology Transition Initiative (P949). The fiscal controls above represent the investment of the TT&T Program funding for the TTI Program (P949). The Technology Transition Initiative (TTI), authorized by Title 10 and Section 215 of the FY2003 Defense Authorization Act, facilitates the rapid transition of new technologies from the Department of Defense (DoD) science and technology (S&T) base into DoD acquisition programs. The program addresses the funding gaps that exist between the time a mature technology is demonstrated and the time it can be funded and procured for use in an intended weapons system or operational capability for the warfighter. The TTI program is mandated by Congress and receives high congressional interest.

Since the program inception in FY 2003, 75 projects have been initiated and 37 are complete. Of the 37 completed projects, 27 (73%) have successfully transitioned to DoD Acquisition Programs of Record or procurement contracts for operational use and subsequent fielding; exceeding the objective of 30% for demonstration programs (Strategic Objective 4-3, Office of the Under Secretary of Defense, Acquisition, Technology & Logistics (OUSD (AT&L). Technology Transition Initiative (TTI) projects are selected by the Technology Transition Manager (DDR&E Research Directorate) in consultation with representatives of the Technology Transition Council (TTC). (The TTC is comprised of the Acquisition and S&T executives from each Service and Defense Agency and representatives from the JROC.) The call for TTI proposals is distributed to the DoD Services and Agencies through the Technology Transition Working Group (TTWG) members, designated by the TTC. The TTWG members receive proposals from their Service/Defense Agency S&T base, conduct a prioritization based on Joint, Service or Agency capabilities needed and submit them to the Office Secretary of Defense (OSD) TTI Program Manager. The Technology Manager's senior staff consolidates the proposal submissions, evaluates the Service/ Agency recommendations, reviews new start selection options based on available resources, and prepares a recommended new start selection list to the Technology Transition Manager for funding. The Technology Transition Manager selects the highest priority proposals for funding.

The OSD FY 2011 proposal call memo will be signed out by the Technology Transition Manager in February 2010, requesting the Services, Agencies and Combatant Commands provide their prioritized inputs by April. OSD is looking for candidate proposals that demonstrate a strong commitment from the operational and acquisition

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communities to transition improved capabilities to operational use or an acquisition program of record. These proposals are being evaluated against the following evaluation criteria: TTI funding must accelerate product transition, the technology must be from the DoD S&T base, Component cost sharing to leverage funding, project duration less than four years, established exit criteria, potential for joint use, value to the warfighter, sufficient technology maturity, and commitment to transition/ acquisition. Final selection of FY 2011 TTI new start projects will be determined in the August 2010 timeframe. A listing of initiatives under review for selection by OSD can be provided to congressional staff members during the budget review.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Electronic Image Intensifier for Pilotage (Army) This project will integrate Electronic Image Intensifier (EI2) technology into a lightweight sensor for the Apache Modernized-Pilot's Night Vision System (M-PNVS). Two form-fit, function and flight ready EI2 prototypes will be developed, built, and delivered to Program Manager-Apache for aircraft qualification and users evaluation flights. The EI2 camera will provide performance that is equal to or greater than the current aviator's night vision goggles and at the same time allow for image fusion with the second generation Forward Looking Infrared (FLIR) on the Apache helicopter. Program Outputs and Efficiencies: meet pilotage requirements for dynamic motion, resolution, and contrast through improved readout electronics and high definition format (1920 x 1080); exit criteria to be met include Aviator's Night Vision Imaging System (ANVIS) performance and $35 thousand per camera; two pre-production prototype cameras delivered for operational flight testing in FY 2010. TTI funding accelerates the transition of this capability by two to three years. This project is funded in FY 2009 & FY 2010 via the Quick Reaction Special projects program element. *FY 2011 Base Plans:* This project will integrate into Apache aircraft; complete aircraft qualification, operational flight testing and initiate procurement activities.	0.000	0.000	1.315	0.000	1.315
Medium Caliber Cartridge Improvements using Micro Electro-Mechanical Systems and Direct Write Explosive Ink	0.000	0.000	1.570	0.000	1.570

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
40 millimeter (mm) M433 and M430 cartridges have been in service since the 1950's and 1970's respectively, and are used with the M203 and MK-19 by all services. Both cartridges use point detonating fuzes with mechanical safe and arm devices which do not reliably detonate on soft impact targets or high graze angles. The objective of this effort is to incorporate a Micro Electro-Mechanical Systems (MEMS)-based Safe and Arm (S&A) device with automated explosive loading technology into current 40mm combat cartridges. Outputs and efficiencies: Incorporate impact sensors that will sense initial impact and electronically send a signal to initiate the explosive train for improved lethality and improved reliability on soft targets (from 50 percent to 90 percent), and also significantly reduce the number of duds on the battlefield and training ranges. The MEMS S&A will also require less volume which will allow room for improvements in lethality or other future alternate applications. This Technology Transition Initiative accelerates transition of this technology by approximately three years. This project is funded in FY 2009 & FY 2010 via the Quick Reaction Special projects program element. *FY 2011 Base Plans:* Complete verification hardware build, conduct independent assessment, qualify fuze, and perform evaluation which will result in changes to technical data package.					
Precision Fires Image (PFI) Software Suite Handheld Capability (Navy) Currently Overseas Contingency Operations (OCO) missions on the ground are planned using traditional means and require dismounted operators, (conventional and Special Operations Forces), who do not carry laptop computers. The mission set is currently supported by paper (maps, printouts of images, etc.). The objective of this program is to integrate Battlespace Awareness (Mission Planning, Force Protection, Direct Action, etc.) capability on a Windows CE/mobile handheld computer by building upon already proven and deployed technology. The availability of these software tools on a handheld	0.000	0.000	1.710	0.000	1.710

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
computer will immediately advance warfighter capabilities by enhancing situational awareness, precision targeting, and rapid employment at the tactical level. Program Outputs and Efficiencies: This program will generate and transition a Government-Off-The-Shelf (GOTS) software suite that provides image, video, and geographical capabilities on the Army's Pocket Sized Forward Entry Devices (PFED) and compatible Special Operations Forces Windows mobile handheld computers. These forward operating Battlespace Awareness applications will be built around the previously transitioned and deployed Precision Fires Image (PFI), which is a National Geospatial-Intelligence Agency (NGA) validated, U.S. Central Command (CENTCOM) approved, image-based targeting tool for coordinate-seeking weapons. Integration to the handheld computer will be advantageous in achieving advanced mission capability with less weight, space, and provide shorter operational readiness delays. The TTI funding will accelerate the acquisition and integration of this handheld software capability by two to three years. This project is funded in FY 2009 & FY 2010 via the Quick Reaction Special projects program element. *FY 2011 Base Plans:* The third year we will integrate Key Length Variable (KLV) data from Unmanned Aerial Systems (UAS) sensor video feeds through rover capability providing sensor point of interest on precision imagery; integrate various Laser Range Finder (LRF) data from operator suites for automatic target reporting and visual representation; incorporate digital communications to support Variable Message Format (VMF) Close Air Support (CAS) missions from the handheld to various dismounted radio combinations; transmit Gridded Reference Graphics (GRG) data to another PFI viewer for Situational Awareness (SA) and battlefield updates, and transition capability to other Program of Records.					
Hellfire Height of Burst (HOB) Sensor (Army)	0.000	0.000	1.050	0.000	1.050

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
The Hellfire Height of Burst Sensor is a miniaturized radio frequency (RF) or laser based target detection device that will be integrated into the new Electronic Safe and Arm Device (ESAD) being incorporated into the next generation Hellfire missile (Hellfire R). The HOB sensor provides for improved lethality against targets in the open by detonating the warhead at a height above ground optimized for these targets. This TTI project funds the final design and engineering of the HOB sensor optimized for Hellfire, provides component and system level environmental and hardware-in-the-loop testing, and allows two flight tests of HOB sensor equipped missiles. Program Outputs and Efficiencies: HOB sensor for the Hellfire AGM-114R missile. The HOB sensor will be integrated into the Hellfire missile and undergo hardware-in-the-loop, environmental, and flight testing as part of the TTI effort. The final outcome will be two missile flights incorporating the HOB sensor. The first flight will replace the warhead with a telemetry package to record the missile flight data as well as the point at which the HOB sensor triggers the warhead. The second flight will incorporate both the HOB sensor and the Hellfire warhead. Lethality data will be collected to validate the modeled performance against targets in the open. Simulation has shown that the HOB sensor will significantly increase the lethality when fired from platforms that allow a steep angle of impact. The Technology Transition Initiative accelerates the transition of this caplability by two years. *FY 2011 Base Plans:* Test reports validating the lethality improvement will be completed and HOB hardware delivery is scheduled. Incorporate design changes in baseline configuration to be included in production missile procurement.					
Accelerated Interlocking Mortar Increment Container Technology (Army) The objective of this project is to accelerate the transition of interlocking mortar increment container (MIC) design and fabrication technology to ensure uniform propellant ignition and reduce differential pressures which will eliminate a noted safety critical mechanism and reduce the possibility of critical	0.000	0.000	0.525	0.000	0.525

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
short rounds (<80% of intended range) due to shearing of fin blades and asymmetrical burn. The interlocking MIC design eliminates the potential alignment of the open ends of the propelling charges and will greatly reduce the chances of more propellant being on one side of the mortar fin boom. This eliminates the imbalance of the energetics and associated potential problematic pressure differential within the mortar tube. The warfighter will have no chance of a sheared fin failure due to unexpected alignment of propelling charges which, in turn, will reduce the possibility of a critically short flight 120mm rounds in theater. Accelerating the maturation, transition, and insertion of this interlocking "high hat" mortar increment container technology into the 120mm mortar ammo program of record (POR) will improve safety and accuracy for our light and dismounted ground forces. It will also lay the foundation for potential subsequent application to 60mm and 81mm mortar ammo if warranted. Program Outputs and Efficiencies: Provides the warfighter with safer mortar ammunition; further prevents the possibility of unexpected short flight of 120mm mortar rounds in theater; improves soldier safety during training. TTI funding accelerates the transition of the capability by 18 months. This project is funded in FY 2010 via the Quick Reaction Special projects program element. *FY 2011 Base Plans:* Generate drawings, specifications, and implement Engineering Change into current 120mm Mortar Propelling Charge Contract.					
Integrated Information Management System (IIMS) Transition (Air Force) The IIMS is a collaborative situational awareness tool which aids in the management of conventional and Chemical, Biological, Radiological, and Nuclear (CBRN) events at fixed, expeditionary and incident response sites. IIMS includes detector/ warning networks, access to CBRN models, and information exchange with civil sector and coalition partner organizations. IIMS is one of the applications in the Air Force Theater Battle Management Core System – Unit Level/Unit Command and Control (TBMCS-UL/	0.000	0.000	1.182	0.000	1.182

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B. Accomplishments/Planned Program ($ in Millions)

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UC2) and integrated with TBMCS-UL/UC2 through web services. IIMS is also a Command and Control (C2) framework used to conduct joint service Research and Development (R&D) into challenges associated with C2, Information Management, Information Exploitation, Data Fusion and Cyber Defense. The objective of this project is to complete and extend the transition of IIMS into TBMCS-UL/UC2 Increment Two, and to fully transition IIMS into the final TBMCS-UC2 Increment One. The additional IIMS capabilities will augment the fielded TBMC-UL/UC2 to extend original capabilities, provide a stand-alone capability, and to incorporate joint CBRN tools. A successful transition of IIMS to TBMCS-UC2 through this spiral development process will significantly increase the capabilities available to the warfighter. Outputs and efficiencies: The transition of IIMS into the TBMCS-UC2 N-tier Service Oriented Architecture; transition of new capabilities into TBMCS-UC2 through the IIMS framework; the adjudication of any Priority I or Priority II software trouble reports at the time of transition; the software will adhere to general quality and reliability standards and include standard software product sets upon delivery (i.e. source code, executable code, documentation, test results); documentation including complete instructions for developers to create a development environment and build components within the framework; a successful test and demonstration in an operationally relevant environment such as a TBMCS-UL/UC2 site, the Port of Ash Shuaybah in Kuwait or the Statue of Liberty National Monument; evaluation by the Air Force 46th Test Squadron for Developmental Test (DT), Functional Test (FT) and Information Assurance (IA) testing resulting in a favorable Authority to Connect (ATO) recommendation; and a Signed Authority to Connect (ATO) for TBMCS-UC2 with IIMS for DoD networks. TTI funding accelerates the availability of this capability by a minimum of one year. This project is funded in FY 2010 via the Quick Reaction Special projects program element. *FY 2011 Base Plans:* Full transition to the TBMCS-UC2 Increment One N-tier Service Oriented Architecture is scheduled for July 2011. The capabilities include: a generic interface to sensor/detector/warning networks; tools					

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B. Accomplishments/Planned Program ($ in Millions)

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for accessing and processing asset data including operational impact and consequence management assessments; tools for evaluating incident response plans; the Joint Battlespace Infosphere publish and subscribe prioritized use of limited bandwidth; integration of the Chemical Hazard Estimation Method Risk Assessment (CHEMRAT) model; multi-level data fusion of sub-threshold data; the Global Strike Near Real-Time Battle Damage Assessment; and the final third party developer documentation and framework. Testing at the Air Force 46th Test Squadron is scheduled for Q3 FY 2011. Adjudication of integration issues is scheduled for Q4 FY 2011 and Q1 FY 2012.					
Transition Initiatives The Annual Call for Technology Transition Initiative Proposals will be released in the January/February for response by April, and OSD review, prioritization and selection during the June/July timeframe. A listing of initiatives under review for selection by OSD can be provided to congressional staff members during the budget review. *FY 2011 Base Plans:* The FY 2011 Annual Call for TTI Proposals will be released in February 2010 for response by April 2010, and OSD review, prioritization and selection during the July/August timeframe. Approximately 30% of FY 2011 program funds are expected to be dedicated to funding tails from prior year projects, providing the remaining approximate 70% to support FY 2011 New Start selections.	0.000	0.000	13.805	0.000	13.805
Accomplishments/Planned Programs Subtotals	0.000	0.000	21.157	0.000	21.157

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

Not applicable for this item.

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E. Performance Metrics

Project performance metrics are specific to each effort and include measures identified in the project plans identified above as well . In addition, program completion and success will be monitored against program schedule and deliverable stated in the proposals. The metrics include items such as target dates from project work break down schedules, production measures, production goals, production numbers and demonstration goals and dates. Generic performance metrics applicable to the Technology Transition Initiative (TTI) program includes attainment of Strategic Objective 4-3, "Speed technology transition focused on warfighting needs". The metrics for this objective and the objective of TTI is to transition 30% of completing demonstrations program per year. In FY 2009, (while TTI was under the QRSP/PE 0603826D8Z program), the Technology Transition Initiative demonstrated a transition rate of 66% and exceeded the 30% goal identified in Strategic Objective 4-3.

FY 2011 Goal: New start of 10 projects per year and conclude the activities on continuing projects with the results of at least 12 technologies transitioning to the warfighter.