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 0603665D8Z: *Biometrics Science and Technology*							
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	9.651	10.904	11.416	0.000	11.416	11.568	14.259	14.491	14.751	Continuing	Continuing
P665: *Biometrics Science and Technology*	9.651	10.904	11.416	0.000	11.416	11.568	14.259	14.491	14.751	Continuing	Continuing

A. Mission Description and Budget Item Justification

In Oct 2006, the Deputy Secretary of Defense designated the Director for Defense Research and Engineering (DDR&E) as Principal Staff Assistant (PSA) for biometrics with responsibility to fully address and exercise control over all facets of the Department's biometrics programs, initiatives, and technologies. Biometrics technologies have unique potential to provide the Department with the capability to take away an adversary's anonymity. The Biometrics Science and Technology (S&T) program provides focused investment to fill current biometrics technology gaps.

Biometrics technologies can be used to both verify an individual's claimed identity and, when combined with additional intelligence and/or forensic information, biometrics technologies can establish an unknown individual's identity. Biometrics technologies have been used effectively in Iraq and Afghanistan in identifying individuals and in forensic applications. The Biometrics S&T program addresses the technology gaps that preclude our ability to quickly and accurately identify anonymous individuals who threaten our interests, in whatever domain they operate.

This program develops a comprehensive biometrics science and technology plan and implements multiple projects to advance capabilities to identify anonymous individuals using individual biometrics.

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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	10.521	10.993	0.000	0.000	0.000
Current President's Budget	9.651	10.904	11.416	0.000	11.416
Total Adjustments	-0.870	-0.089	11.416	0.000	11.416
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-0.089			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	-0.605	0.000			
• SBIR/STTR Transfer	-0.265	0.000			
• Other Program Adjustments	0.000	0.000	11.416	0.000	11.416

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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
P665: *Biometrics Science and Technology*	9.651	10.904	11.416	0.000	11.416	11.568	14.259	14.491	14.751	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program will develop technologies to improve the quality of biometric derived information provided to the operational forces for the purpose of identifying and classifying anonymous individuals and for forensic applications. It will enable execution of a Department of Defense and interagency coordinated biometrics science and technology plan that supports technology transition to acquisition programs in FY 2010 and out-years.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Biometrics Science &Technology Planning	0.501	0.500	0.495	0.000	0.495

A comprehensive Biometrics Science and Technology (S&T) Strategic Plan was developed and will be continually refined to guide component level investment in biometrics technology.

FY 2009 Accomplishments:

Completed Biometrics S&T plan and roadmap to guide component biometrics S&T investments.
Developed beta version of a biometrics “dashboard” to assess performance metrics and return on investment. The S&T roadmap was developed in consideration of the recently completed Joint Staff Biometrics Capability-Based Assessment (CBA) which is part of the process of defining formal biometrics requirements.

FY 2010 Plans:

Sponsor a Biometric and Forensic S&T Workshop with interagency participation to review current S&T projects and provide visibility on DoD S&T efforts.
Leverage membership in the Center for Identity Technology Research (CITeR) to support research in priority biometrics areas relevant to DoD.

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
(Multimodal fusion vulnerability to imposters, Iris segmentation quality analysis prediction and rectification, Impact of age and aging on iris recognition, Detecting, restoring and matching altered fingerprints) Continued maintenance of the Biometrics S&T roadmap to incorporate emerging technologies and evolving capability requirements and gaps. Develop Biometric S&T Implementation Plan to inform and guide the Department's S&T investment. Transition the biometrics "dashboard" to the Executive Agent (Army) for continued refinement and maintenance. *FY 2011 Base Plans:* Continually review biometrics strategy, plan, roadmap and model to ensure currency and relevance to emerging biometrics related needs.					
Biometrics Technology Projects Biometrics capabilities and gaps are continually evaluated though the planning process addressed previously and gaps will be addressed through the competitive solicitation of focused proposals. Broad Agency Announcements (BAA), technical proposal reviews, selections and awards will recur annually. *FY 2009 Accomplishments:* -Completed multiple demonstrations of various technologies to improve standoff collection, quality and matching accuracy of facial and iris images. Results provided to Army to inform development of their FY 2010 new start acquisition program for tactical biometrics collection devices. -As a follow-up to the FY 2008 BAA, solicited focused proposals to (1) develop innovative means to capture fingerprint, face and iris images in all conditions with a single sensor (3 of 19 submissions selected for this focus area), and (2) to demonstrate the Ability to leverage matching across multiple modalities (3 of 27 submissions selected for this focus area). -Evolutionary Approach to Adaptive Fusion: Developed a functional model/tool of the multimodal biometric system that leverages an evolutionary approach to biometric fusion and can dynamically	6.600	6.911	7.200	0.000	7.200

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
update the biometric system. This capability provides the warfighter with a more effective means to recognize and identify individuals operating in uncontrolled environments common to DOD. -Robust Image Sanity Check and Age Estimation: Developed and delivered three integrated components to provide an intelligent multimodal fusion engine that incorporates quality measures from soft biometrics, automatic robust image sanity checks and age estimation. This project provides Warfighters with a tool to mitigate terrorist tactics of using disguises by leveraging multimodal fusion and using soft biometrics to improve matching capabilities. -Robust Multimodal Face, Iris & Ear Acquisition: Developed and delivered a single-sensor system designed to simultaneously capture face, iris (and possibly ear) biometric data at stand-off distances between 8 – 15 meters using recently released COTS camera hardware. This system provides warfighters the ability to enroll or match a suspect at longer and safer stand-off distances without having to lay down their weapons to operate handheld systems. -Joint Iris / Face Identification Camera: Developed and delivered a Joint Iris/Face Identification Camera (JIFI-Cam) to collect and process multimodal biometric data and operate with unprecedented ease-of-use. This project offers the warfighter a significant improvement over current technology in that it will enable an operator to image cooperative subjects from a safe “beyond-arm’s-reach” distance with one-handed point-and-shoot simplicity. -Grapheme-Based Universal Biometric Fusion Engine: Developed and delivered a biometric fusion engine that assigns grapheme-based data structures to fingerprints, face and voice captures, leveraging a common set of algorithms for template creation and matching. This project allows warfighters to use biometrics in more tactical situations with better results. -Multimodal Biometric Fusion Handheld Device: Developed and delivered a multimodal biometric fusion handheld device that collects fingerprint, face, iris and voice and to more effectively identify individuals. This project automates the evaluation and selection of biometric samples by the warfighter, simplifies and hastens the capturing process, and increases the chance of obtaining biometric samples of good quality.					

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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: Release Broad Agency Announcement (BAA) and select projects based on the identified technology gaps. Continue to review the results of technology demonstrations and focus technology development solicitations on achieving technology readiness levels needed to transition to FY 2010 new start programs of record. Complete data call of Department of Defense Biometric Science and Technology (S&T) requirements and gaps to derive the focus areas used to inform the FY 2010 BAA. Coordinating focus areas with interagency S&T partners to minimize redundancies and leverage others' S&T investments. *FY 2011 Base Plans:* Continue to refine priorities and focus projects on transition opportunities to biometrics program of record. Expand modalities beyond face, finger and iris to include expanded development of voice and DNA.					
Forensics Commercially available forensics technologies have been developed for use in permissive law enforcement operations and fixed site laboratories. The Department of Defense (DoD) has a requirement to collect, preserve, exploit and analyze forensics materials from site exploitations in forward deployed expeditionary operations and with field hardened equipment suitable for use by military personnel. The forensics projects under this program will develop expeditionary forensic collection, processing and exploitation systems capable of operating in all tactical environments. *FY 2009 Accomplishments:* Completed development of a forensics Science and Technology (S&T) strategy and solicited focused proposals consistent with identified gaps. Leveraged forensics technology development efforts of other US government activities to include the Department of Homeland Security (DHS), Federal Bureau of Investigation (FBI) and the National Institute of Justice (NIJ). Initial investments focused on technologies that enhanced the testing for the presence of specific explosives, drugs, and heavy	2.550	3.493	3.721	0.000	3.721

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
metals/gunshot residue for the war-fighter in the field; developing a prototype device that interrogates cell phones with cameras to determine if stored images were captured by the cell phone's integrated camera or were received into memory from some other source, such as a website; and, developing an automatic feeding capability to capture digital images of latent prints from paper documents to identify, locate, and capture digital images of individual latent prints from an original document, or from a larger, parent digital image of that document. -Accelerated Nuclear DNA Equipment (ANDE) Project: Co-sponsored (with JIEDDO) a field-deployable rapid DNA profiling system using advanced micro-fluidic technologies to demonstrate accelerated DNA sequencing and matching in a field deployable system. This project provides the warfighter with a much faster methodology to analyze DNA samples. -Four additional Forensics projects have been solicited through the Director, Defense Research and Engineering (DDRE) Open Business Cell (OBC). As of this submission, the results of the OBC solicitation process is not yet finalized. *FY 2010 Plans:* Continue to review results of technology demonstrations and focus technology development solicitations on achieving improved technology readiness levels for expeditionary forensics capabilities. *FY 2011 Base Plans:* Continue to refine priorities and focus projects on transition opportunities to forensics programs of record and interagency partnerships.					
Accomplishments/Planned Programs Subtotals	9.651	10.904	11.416	0.000	11.416

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C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Defense Biometrics S&T strategy is to annually assess technology gaps in the Department's combined S&T portfolio, and sponsor projects that help close those gaps. These projects are designed to advance immature technologies and deliver a prototype. This strategy was initiated in FY 2008, and the first five projects each delivered prototypes in October 2009.

Additional development is required for these first prototypes prior to selection for production. It is anticipates that the first five prototypes will transition in FY 2010. Due to the relative newness of the Biometrics S&T program, the DoD Strategic Objective 4-3 (transition 30% of completing demonstrations program per year) will not be a measurable performance metric until FY 2010 closeout.

In the interim, project performance metrics are specific to each effort and include measure identified in the project plan. In addition, program completion and success will be monitored against program schedule and deliverables 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.