Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Office of Secretary Of Defense										DATE: February 2012	
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 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	10.847	10.406	-	-	-	-	-	-	-	Continuing	Continuing
P665: *Biometrics Science and Technology*	10.847	10.406	-	-	-	-	-	-	-	Continuing	Continuing

Note

This program is terminated in FY 2013 as part of DoD priorities and adjustments.

A. Mission Description and Budget Item Justification

Biometric technology is revolutionizing critical military operations by providing the warfighter with the ability to verify an individual's claimed identity; and, when combined with additional intelligence and/or forensic information, establish an unknown individual's identity, which strips away his anonymity. These emerging technologies provide Department of Defense (DOD) warfighters and commanders with an important capability that supports such missions as base access, force protection, maritime intercept and counter-piracy operations, counterintelligence screening, humanitarian assistance, and displaced persons management. Additionally, the biometrics and identity information collected during DOD missions are shared with the Department of Homeland Security, the Department of State, and the Department of Justice, to support homeland defense, law enforcement, and other national interests.

In Oct 2006, the Deputy Secretary of Defense designated the Assistant Secretary of Defense for Research and Engineering (ASD(R&E)) as Principal Staff Assistant (PSA) for biometrics, followed in April 2011 with the designation of the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) as the PSA for forensics. The PSAs for biometrics and forensics have the responsibility to fully address and exercise control over all facets of the Department's biometrics and forensics programs, initiatives, and technologies. A central role of the Biometrics and Forensics Program is to support each respective PSA in addressing the technology gaps that preclude our ability to quickly and accurately identify anonymous individuals who threaten our interests and provide the ability to attribute enemy activity to a specific individual.

The Biometrics and Forensics Program develops an annual comprehensive science and technology (S&T) plan and implements multiple projects to advance capabilities in both biometrics and forensics. This S&T plan includes a portfolio of emerging technologies that will support the evolving capabilities required by the commanders and warfighters in ongoing and future military operations.

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B. Program Change Summary ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	11.416	10.762	14.140	-	14.140
Current President's Budget	10.847	10.406	-	-	-
Total Adjustments	-0.569	-0.356	-14.140	-	-14.140
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.200	-			
• SBIR/STTR Transfer	-0.268	-0.284			
• Economic Assumptions	-0.058	-	-	-	-
• FFRDC	-0.040	-0.072	-	-	-
• Other Program Adjustments	-0.003	-	-14.140	-	-14.140

Change Summary Explanation

This program is terminated in FY 2013 as part of DoD priorities and adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Office of Secretary Of Defense			DATE: February 2012
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COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
P665: *Biometrics Science and Technology*	10.847	10.406	-	-	-	-	-	-	-	Continuing	Continuing

Note

This program is terminated in FY 2013.

A. Mission Description and Budget Item Justification

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The Biometrics and Forensics Program develops an annual comprehensive science and technology (S&T) plan and implements multiple projects to advance capabilities in both biometrics and forensics. This S&T plan includes a portfolio of emerging technologies that will support the evolving capabilities required by the commanders and warfighters in ongoing and future military operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: Biometric Information Technology Evaluation (BITE)	0.650	0.400	-
Description: BITE served as the focal point for assessing the DOD biometric and forensic capabilities. Building on previous work, BITE expanded the analysis of the effectiveness of the use of biometrics and forensics to include operations in Afghanistan. The project focused on four tasks to support the mission in Afghanistan: (1) identifying the location and/or mission that generated the most matches to the biometrically enabled watchlist; (2) developing a return on investment calculation framework for the use of			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
biometrics in Iraq and Afghanistan; (3) measuring the additional value provided by rolled fingerprints in support of latent matching; and (4) applying a metrics framework to DOD's Defense Forensic Enterprise. ***FY 2011 Accomplishments:*** The metrics framework for DOD's Defense Forensic Enterprise has been completed and transitioned to DOD. ***FY 2012 Plans:*** Initial analysis of the biometrically enabled watchlist will be delivered to DOD in 1Q FY 2012. BITE will further expand the research into identifying recommendations for improved employment of biometrics in support of force protection and the development of a metrics dashboard for the DOD Defense Forensic Enterprise.			
Title: Field User Evaluation of Standoff Facial Recognition and Automated Registration ***Description:*** The Tactical Analysis of Video Imagery (TAVI) system is a real-time video analysis, face recognition, and human activity recognition system. People detected near the same time and in the same area can be connected by the software, and these connections are analyzed with social network analytical tools to determine the affiliations of the monitored people. The payoff is to produce a system deployable at Forward Operating Bases (FOB) which will be supported by two wide-area surveillance cameras mounted on portable masts to look at an overview of the area, as well as four pan/tilt/zoom (PTZ) cameras mounted on rugged tripods at the corners of each FOB. The wide-area and PTZ cameras work together to provide automated tracking and face recognition of observed targets at distances up to 40 meters. In addition, two long range, manually controlled cameras are provided for extending facial recognition range to 100 meters. The outcome of this project is a stand-off force protection capability and operational test data to inform future investments. ***FY 2011 Accomplishments:*** The project conducted system testing, user manual writing, and user training. The systems were transitioned to the Marine Corps for deployment to five Forward Operating Bases in Afghanistan.	0.385	-	-
Title: Aptamer Selection and Integration in Nanoparticle-Based Detection Systems ***Description:*** This project discovered novel biological recognition elements, specifically DNA and/or RNA oligomers known as aptamers, that bind with high specificity and sensitivity to molecules of interest. Several different platforms were investigated at the Air Force Research Laboratory to convert this binding event into optical and electrical signals which allowed for implementation into a handheld sensor. The primary output of this project is to deliver a selection method for aptamers that can be used to detect multiple chemicals and detection assays for multiple analytes, which have been examined with several platforms, as well as a prototype microfluidic field effect transistor sensor. This will enable the development of a handheld forensic device capable of detecting trace levels of particular chemicals.	-	0.180	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
FY 2011 Accomplishments: Project initiation occurred in 2010, and in 2011 the project developed a new discovery method for aptamers and functionalized various types of nanoparticles. ***FY 2012 Plans:*** The project will demonstrate multi-target detection and integrate the aptamers into a modular chip platform for multiplex assays and long-term application into complex matrices.			
Title: Age of Latent Fingerprints for Tracking Suspects ***Description:*** This project investigated the feasibility of using DNA or other chemicals in a latent fingerprint to determine the age of that particular print. It is known that DNA degrades at ambient conditions. This project is determining the time course for this degradation and evaluating whether it can be used to estimate when a suspect made that fingerprint. The objective of this work is to determine if DNA degradation can be correlated with exposure time to ambient conditions. ***FY 2011 Accomplishments:*** The investigators evaluated DNA degradation from latent fingerprints. ***FY 2012 Plans:*** A final report evaluating the feasibility of this technique will be provided early in FY 2012. This report's findings and recommendations will be distributed throughout the DoD and Interagency DNA user communities, and will inform the intelligence community of the use of DNA aging to determine how recently a fingerprint of interest was left at a particular location, tying a person of interest to a particular place at a particular time. The information will also inform the tactics, techniques, and procedures used by DoD law enforcement to perform the same analysis when conducting traditional criminal investigations.	0.655	-	-
Title: Computational Iris Capture Camera Prototype and Demonstration ***Description:*** This project improved image quality in biometrics databases by reducing motion blur for handheld iris enrollments using a fluttering shutter technique. The flutter shutter technique has applications for both iris and facial imaging systems, especially when collection is performed at greater distances. The project delivered a prototype iris image capture camera incorporating fluttering shutter and coded capture with an associated user's guide and final report. ***FY 2011 Accomplishments:*** This project has demonstrated initial success with improving image quality and reducing motion blur, which is the main source of error when performing iris collection. These successful computational corrections techniques mitigate the need for expensive, bulky optics traditionally required for iris or face image collection at extended ranges, making collection devices more portable,	0.858	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
more capable, and cheaper. The project transitioned to the Army for operational testing and technology insertion into the Joint collection device program of record.			
Title: Non-Contact Biometric Hand Scanner ***Description:*** This project developed a non-contact, mobile hand print biometric capture system that is capable of capturing high quality three dimensional images of all five fingers and the palm in a single presentation. This effort delivered a robust prototype field operating unit and test reports. The result is a technology that supports a wide range of applications where a high through put of individuals is required. The primary output is improved force protection at DoD installations by making the process of fingerprint collection and identification faster and easier for the end user while avoiding long lines. ***FY 2011 Accomplishments:*** This project demonstrated a proof of concept for whole hand biometric image capture. The project has transitioned to the Army for operational testing and technology insertion into the Joint collection device program of record. Prototypes and research has been provided to the Department of Homeland Security.	0.835	-	-
Title: Improving Iris Recognition Matching of Off-Angle and Dilated Non-Ideal Data ***Description:*** Accurately capturing iris biometric data at other than direct facial angles is a challenge. This project researched an approach to improve performance in segmenting and matching iris data captured at angles greater than 20 degrees off-angle. As part of this effort, the investigator delivered image processing and pattern recognition algorithms to improve the performance of iris recognition in the presence of refractive distortion and/or dilation. ***FY 2011 Accomplishments:*** This project modeled the human eye for testing and evaluated the image processing and pattern recognition algorithms, and is complimentary with the Handheld Unconstrained Iris Camera project (below). These models and the accompanying algorithms better enable the collection of iris images in non-ideal situations where the subject is not looking directly into the camera. The technology is a key enabler to nearly all the use cases for iris recognition, including force protection, person of interest identification, and media exploitation. The project has transitioned to the Army for operational testing and technology insertion into the Joint collection device program of record.	0.865	-	-
Title: Handheld Unconstrained Iris Camera ***Description:*** This project addressed the challenges associated with warfighters capturing iris biometric data of freely moving subjects, at oblique angles, and in suboptimal lighting conditions, such as bright sunlight. This effort resulted in the development of a hand-held iris camera with design documentation and an evaluation report for the device. ***FY 2011 Accomplishments:***	0.900	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
This project developed image processing and pattern recognition algorithms to improve the performance of iris recognition at off-angles and while the subjects were moving, and is complimentary with the Improving Iris Recognition Matching of Off-Angle and Dilated Non-Ideal Data project (above). These collection and processing techniques better enable the collection of iris images in real-world environments where the collection is performed in bright sunlight or the subject is not looking directly into the camera. The technology is a key enabler to nearly all the use cases for iris recognition, including force protection, person of interest identification, and media exploitation. The project has transitioned to the Army for operational testing and technology insertion into the Joint collection device program of record.			
Title: Biometric Scientific Research Assessment ***Description:*** This is a two-phase project to improve the underlying confidence in biometrics. Phase I identified and assessed biometric related academic research as it pertains to the National Academies of Science report on "Biometric Recognition: Challenges and Opportunities" and DOD. The purpose of this assessment is to identify those biometric disciplines that are critical to the national security mission but have not received significant research in the academic community. This effort provided a catalog of existing research and a final report that identified opportunities for investment in future research. ***FY 2011 Accomplishments:*** This project developed a comprehensive catalog of existing biometric research published by academia. The assessment identified biometric research already performed by academia. The project has transitioned to the Army and to Interagency partners to inform the ongoing development of biometric technology roadmaps. ***FY 2012 Plans:*** The second phase will conduct the necessary research identified in Phase I to improve the underlying confidence in biometric technology.	0.275	0.100	-
Title: Portable Low Temperature Plasma Miniature Mass Spectrometer (LTP Mini-MS) ***Description:*** This project developed a hand-portable mass spectrometer device for the detection of explosives, chemical weapons agents, illegal drugs, gunshot residues, and other toxic and hazardous chemical compounds. This significant reduction in size enables the warfighter to conduct chemical forensic analysis on site, and eliminates lengthy delays and costs from transporting samples back to laboratories. Of note, this project was formally known as Desorption Electrospray Ionization Mass Spectrometer (DESI) but was changed due to improvements in the technical approach. This effort delivered four miniature mass spectrometer systems and provided documentation and performance information. The primary output of this effort is a system that enables operators the ability to quickly determine whether suspect chemicals are derogatory or not and take appropriate actions. Such actions could include performing tactical questioning of the person in possession of the derogatory chemicals, in order to gain sufficient tactical information to conduct follow-on military actions against other members of the same network.	0.665	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
FY 2011 Accomplishments: This project developed the specified prototypes and transitioned to the Army for operational testing and evaluation.			
Title: Stokes Image Sensor for Non-Invasive and Rapid Latent Fingerprint Detection ***Description:*** This project developed a portable system that can rapidly capture a latent fingerprint without disturbing the site. This system uses an optical technique to image latent prints using spatially resolved polarization phase shifts of a probe laser. This is a two-phase effort that includes a proof-of-principle experiment followed by the development of an operational prototype. The primary output of this effort is the ability to collect latent prints without traditional powders. This latent print capability enables investigators to identify an individual frequenting a particular location, without alerting the individual to DoD's ongoing investigation by leaving powder residue at the scene. ***FY 2011 Accomplishments:*** The first phase developed a test bed and executed proof of principle tests to demonstrate the Stokes Image Sensor capabilities. ***FY 2012 Plans:*** The second phase will develop and deliver a prototype of the portable Stokes Image Sensor.	0.510	0.237	-
Title: Detection and Imaging of Undeveloped Latent Fingerprints ***Description:*** This project researched the appropriate technique (optical, chemical, and thermal imaging) for locating and capturing latent fingerprints on a variety of surfaces. This enabled forensics labs to more efficiently detect and capture undeveloped latent fingerprints on a range of objects. This effort provided research and a final report on the performance of the various investigated imaging techniques with appropriate recommendations for use and further development. The primary output of this effort is a more informed biometric and forensic capability and improved techniques for identifying latent fingerprints on a variety of surfaces. The information informs the tactics, techniques, and procedures used by DoD to analyze IED components and weapon caches, or to exploit sensitive sites and conduct criminal investigations. ***FY 2011 Accomplishments:*** This project developed an imaging system and the test protocol for locating and capturing latent prints, and provided a report on their efficacies. The project transitioned to the Army for operational testing and evaluation.	0.650	-	-
Title: Speckle Imaging for Fingerprint Technology ***Description:*** This project is researching the use of an optical dual-wavelength speckle imaging technique to capture fingerprints. The Speckle Imaging for Fingerprint Technology (SIFT) enhances ridge details in fingerprints by optically sensing periodic variations in the surface slope in the neighborhood of ridges. SIFT leverages a low-power, eye safe laser beam to scan the finger and detect the ridges. The innovative use of a laser allows for contactless capture of the fingerprint as opposed to traditional	0.550	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
fingerprint sensors, which must be in contact with the finger. The outcome of this effort will provide a proof-of-concept for 10 meter stand-off fingerprint capture. Non-contact fingerprint scanning technology will improve force protection at DoD installations by making the process of fingerprint collection and identification faster and easier for the end user while avoiding long lines. ***FY 2011 Accomplishments:*** System development of the prototype device was initiated. ***FY 2012 Plans:*** The project will be transitioned to the Army for operational testing and technology insertion into the Joint collection device program of record, and prototypes and research will be provided to the Department of Homeland Security to inform development of their collection device program			
Title: Biometrics Automated Toolset – Army (BAT-A) Handheld Testing ***Description:*** This project funded the test and evaluation of the proposed biometric tactical collection handheld device for the BAT-A Refresh and Sustainment effort. This testing evaluated the handheld's performance while under adverse weather conditions and various environmental conditions. The evaluation examined the device's ability to accurately match an individual's identity against thousands of subjects in the onboard device database using only fingerprints and iris scans, and record the speed with which those matches are achieved. This effort produced a test and evaluation report for the given biometric device. ***FY 2011 Accomplishments:*** This project tested the proposed device and a final test and evaluation report has been delivered to the Project Manager, DOD Biometrics. The device has since been successfully deployed to the Afghanistan theater of operations and resulted in the identification and detention of several top-tier terrorists.	0.450	-	-
Title: Forensic Science Validation of Latent Fingerprint Analysis ***Description:*** This project examined the scientific basis of latent fingerprint validation techniques through a rigorous examination of the latent fingerprint analysis process. The payoff is a statistical assessment of the latent fingerprint process, resulting in improved forensic analysis methodologies. The effort also produced a roadmap for future forensic validation studies. The primary output of this effort is recommendations that inform the development of improved procedures and requirements for latent fingerprint examiners, increasing the accuracy and performance of the US Government's biometric and forensic enterprises in many areas including force protection, homeland defense, and criminal justice. ***FY 2011 Accomplishments:***	0.550	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
This project conducted a review of prior latent fingerprint analysis methods and an evaluation of latent fingerprint match reliability. The report's findings and recommendations have been distributed throughout the DoD and Interagency forensic user communities, informing the biometric and forensic enterprises on the reliability of latent print matching.			
Title: Automated Liquid Handling for DNA Processing ***Description:*** This project evaluated, selected, and internally validated an automated liquid handling system and sample tracking software capability. This technology is being used for casework applications within DOD DNA labs and has the potential to save 1,800 man-hours annually, while also improving test reliability by reducing the possibility of human error during sample preparation and processing. This effort produced an assessment and recommendation for implementing two systems for automated DNA handling. The outcome of this project is technology that should save 1,800 man-hours annually at each location the technology is implemented, while also improving test reliability by reducing the possibility of human error during sample preparation and processing. ***FY 2011 Accomplishments:*** This project completed the initial assessment of the effort and delivered a written recommendation to facilitate automated DNA handling. This project has been transitioned to the Army for implementation.	0.427	-	-
Title: Management of Digital Identities ***Description:*** The purpose of this project was to examine the DOD role in managing digital identities for security screening and access control, and to understand how these DOD missions will integrate into a larger federated US Government strategy. This effort produced a prioritized gap analysis of digital identity processes within DOD with associated recommendations and courses of action for implementing a digital strategy within DOD. The outcome of this study is recommendations that inform the development of DoD policy and implementation plans, and reflect legal, regulatory, cultural and civil liberty issues that affect the use of DoD identity information across the interagency. The policies resulting from this project enable DoD to more efficiently execute key missions such as force protection, access control, and identification of terrorists. ***FY 2011 Accomplishments:*** This project completed the initial assessment of gaps associated with the establishment of digital identities within DOD.	0.347	-	-
Title: Biometric and Forensic Information Services Model-Based Systems Engineering ***Description:*** This project provided enterprise and solutions-level Model-Based Systems Engineering (MBSE) and architecture development, collaboration, and review support. Solutions that were developed were assessed for impact to current operations and selected investment strategies to address identified mission gaps. This effort produced appropriate scenarios and concepts of operation for the various enterprise and solutions-level MBSE analysis.	0.375	1.100	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
FY 2011 Accomplishments: This project completed the initial assessment of biometric and forensic architectures. The DoD Biometric and Forensic Information Services resulting from this effort provide the warfighter rapid identity and forensic analytical products/results in a format that supports decision-making and mission execution. These benefits increase substantially as the architecture matures from integrated, to executable, to actionable. ***FY 2012 Plans:*** The MBSE effort will evaluate the enterprise architectures at the solutions level and provide recommendations for future technology implementations to support the warfighter.			
Title: Forensic Analysis Imaging Tool (FASIT) ***Description:*** This project will develop a technology to rapidly locate trace forensic evidence and areas of interest within battlefield environments using specific wavelength bands of light. ***FY 2012 Plans:*** The project will provide two prototype systems for use in expeditionary lab environments with associated technical and training manuals.	-	0.400	-
Title: Single-use Sensor Strips for Reliable Field Analysis of Gunshot Residues ***Description:*** This project will investigate the ability to immediately identify individuals that fired a weapon in a battlefield environment using electrochemical stripping voltammetry. This technique is currently used by the medical community for blood testing and will be adapted for a battlefield forensic application. Improved gunshot residue detection techniques will enable more confidence in the identification of malign agents, and reduce the number of inconclusive results encountered with existing gunshot residue tests. ***FY 2012 Plans:*** This project will develop a hand-held prototype device, using disposable sensor strips, for gunshot residue field detection with appropriate software and documentation.	-	0.200	-
Title: FY 2012 Fingerprint Sensor Development ***Description:*** DOD has a requirement for a smaller, lighter, and more resilient tactical biometric collection device. The size of current optical fingerprint sensors limits today's tactical biometric collection devices. There is a need for a non-optical fingerprint collection technology that meets the smaller, lighter, and more resilient requirement for the warfighter. This project will identify	0.550	0.800	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
novel technologies that can advance non-optical fingerprint collection, and will be funded and managed jointly with the Department of Homeland Security. ***FY 2011 Accomplishments:*** The effort was kicked-off with an initial assessment of innovative research in fingerprint collection devices. The assessment led to the development of a prototype to capture flat fingerprints in a smaller, lighter, more resilient form factor. ***FY 2012 Plans:*** The project will explore the use of novel technologies for fingerprint collection in austere environments and include test and evaluation events to support technology transition.			
Title: FY 2012 Biometric Algorithm Development ***Description:*** The Biometrics Enterprise requires efficient use of processing, cataloging, storing, and matching of biometric data. A common challenge across the enterprise is the use of commercial algorithms for segmentation, quality assessment, and matching. As the amount of biometric data collected by DOD increases, the cost for using commercial algorithms rises significantly. This project will explore the feasibility and return on investment for developing and maintaining government owned algorithms for DOD, which would also be useable by interagency partners. ***FY 2012 Plans:*** This project will examine existing government owned biometric algorithms and develop a recommendation for using government owned verses commercially available algorithms. This project will investigate algorithms developed and maintained throughout the interagency.	-	0.700	-
Title: FY 2012 Biometric Testing and Evaluation ***Description:*** This effort will support the development of a standard data set for testing biometric technologies. In addition, this project will leverage the standard data set to assess biometric prototypes that have been transitioned to DOD. The assessment will focus on evaluating software and hardware deliverables from completed projects to determine the potential for transition and fielding to the warfighter. This project will be funded and managed jointly with the National Institute of Justice. ***FY 2012 Plans:*** This project will produce a standard test data set that can be leveraged by DOD and interagency partners for test and evaluation purposes. The FY 2012 project will focus on fingerprint capture and will leverage existing efforts within the interagency. In addition, this project will provide test results and a report with recommendations and a suggested path forward.	-	0.900	-
Title: Battlefield Automated DNA Analysis and Sampling System	-	0.300	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Description: This project will develop a portable system that enables rapid, fully automated DNA sample preparation and analysis in the field. The proposed architecture employs a novel droplet-based digital microfluidic (DMF) platform as a hub interfacing both intermittent and continuous-flow microchannel-based fluidic modules. This technology is a key component in the development of miniaturized equipment for DNA analysis, and also supports the development of a range of other miniaturized assay equipment. ***FY 2012 Plans:*** This project will deliver a self-contained DNA extraction/isolation module and the preliminary design for a cubic foot-sized, field-deployable system ruggedized to operate in non-laboratory environments and capable of automated sample operation.			
Title: Rapid DNA Processing Initiative ***Description:*** This initiative is examining alternative technologies to expedite the identification, collection, and processing of DNA samples in an expeditionary environment. This includes the development of a technology to process DNA using alternative microfluidic technologies as well as training on existing and future DNA sampling techniques. ***FY 2012 Plans:*** This project will deliver a low rate production prototype to be tested and evaluated by the warfigther. The project is improving on existing research with the goal to process a DNA sample in less than 60 minutes.	-	0.400	-
Title: FY 2012 Biometric Broad Agency Announcement ***Description:*** As biometrics matures within DOD, the requirements and needs of the user are becoming increasingly complex and require specific solutions that have not been developed. Innovative solutions from academia and industry are required to advance the state-of-the-art of biometric capabilities and meet these warfighter needs. This project will leverage an open solicitation to identify novel technologies that can advance biometric science within DOD and transition to the warfighter. ***FY 2012 Plans:*** The project will explore the use of novel technologies to conduct existing biometrically enabled missions in new ways or to exploit materials that are currently not examined.	-	1.744	-
Title: FY 2012 Expeditionary Forensic Broad Agency Announcement ***Description:*** There is a requirement from the warfighter and commander to support the development of innovative technologies that will provide an emerging expeditionary forensic capability. This project will leverage an open solicitation to identify novel technologies that can advance forensic science within DOD and transition to the warfighter. ***FY 2011 Accomplishments:***	0.350	1.100	-

Exhibit R-2A, RDT&E Project Justification: PB 2013 Office of Secretary Of Defense		DATE: February 2012
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*	PROJECT P665: *Biometrics Science and Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
The effort has kicked-off with initial research and advertisement of a solicitation to identify new and emerging research in the areas of DNA, latent fingerprints, firearms and toolmarks, trace evidence, explosive detection, and drug chemistry. ***FY 2012 Plans:*** The project will explore the use of novel technologies to conduct existing forensic examinations in new ways or to exploit materials that are currently not examined. For existing forensic examinations, it will explore new technologies that reduce processing times or increases sensitivities by an order of magnitude.			
Title: FY 2012 Forensic Science Validation ***Description:*** The National Academies of Science report on "Strengthening Forensic Science in the United States: A Path Forward" calls for the need to strengthen the scientific basis for several forensic science disciplines to include latent fingerprint and tool mark analysis. DOD leverages several forensic science disciplines for law enforcement and battlefield forensics. More rigorous study of forensic science disciplines is required within DOD. ***FY 2012 Plans:*** This effort will consist of a scientific study to determine probabilistic measures for evaluating match results from multiple forensic science disciplines to include tool mark analysis.	-	1.045	-
Title: FY 2012 Forensic Technical Evaluation ***Description:*** This effort will assess forensic prototypes that have been transitioned to DOD. The assessment will focus on evaluating software and hardware deliverables from completed projects to determine the potential for transition and fielding to the warfighter. ***FY 2012 Plans:*** This project will produce test results and a report that provides recommendations and a suggested path forward for the forensic technology being evaluated.	-	0.800	-
Accomplishments/Planned Programs Subtotals	10.847	10.406	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2013 Office of Secretary Of Defense		DATE: February 2012
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*	PROJECT P665: *Biometrics Science and Technology*

E. Performance Metrics

Defense Biometrics and Forensics Science & Technology (S&T strategy) is to annually assess biometric and forensic 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 concurrent with the first year of funding, and the first five projects each delivered prototypes in October 2009.

In FY 2011, eight projects were completed with prototype or final product delivery. Six projects were focused on biometrics and transitioned to the Army as the Executive Agent for Biometrics. Two of the projects were focused on forensics and were transitioned to the Army as the Executive Agent for Forensics. Additional development will be required for these prototypes prior to selection for production. The Biometrics transition rate of 100% for FY 2011 exceeds the 30% benchmark established by DOD Strategic Objective 4-2D.

In addition, project performance metrics specific to each effort are identified in the project plan, and individual project success will be monitored through these metrics. 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.