Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Office of Secretary Of Defense										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0605140D8Z: *Trusted Foundry*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	53.014	35.512	-	-	-	-	-	-	-	Continuing	Continuing
Trusted Foundry: *P014*	53.014	35.512	-	-	-	-	-	-	-	Continuing	Continuing

Note

The Trusted Foundry PE 0605140D8Z transfers to the Defense Logistics Agency in FY 2012.

A. Mission Description and Budget Item Justification

The Department of Defense (DoD) and National Security Agency (NSA) require uninterrupted access to state-of-the-art design and manufacturing processes to produce custom integrated circuits designed specifically for military purposes. In accordance with DoD Instruction 5200.39, integrated circuits in critical/essential systems need to be procured from trusted sources in order to avoid counterfeit, tampered, or sabotaged parts. Worldwide competition from foreign state-subsidized manufacturing facilities (foundries) is making fabless semiconductor companies the norm in the United States. Sophisticated off-shore design and manufacturing facilities with engineering labor rates vastly less than U.S. engineering rates have resulted in outsourcing of electronics components and integrated circuits. These trends threaten the integrity and worldwide leadership of the U.S. semiconductor industry by eliminating many domestic on-shore suppliers and reducing access to trusted fabrication sources for advanced technology. These trends are of acute concern to the defense and intelligence community. Secure communications and cryptographic applications depend heavily upon high performance semiconductors where a generation of improvement can translate into a significant force multiplier and capability advantage. Important defense technology investments and demonstrations carry size, weight, power, and performance goals that can only be met through the use of the most sophisticated semiconductors.

The Trusted Foundry program provides DoD and NSA with trusted state-of-the-art microelectronics design and manufacturing capabilities necessary to meet the performance and delivery needs of their customers. The program will also provide the Services with a competitive cadre of trusted suppliers that will meet the needs of their mission critical/essential systems for trusted integrated circuit components. NSA, in their role as the Trusted Access Program Office, has successfully looked to commercial sources to satisfy their requirements. Access to trusted suppliers is imperative to ongoing and future DoD/NSA systems, and most centrally, Trusted Foundry access is absolutely necessary to meet secure communication and cryptographic needs for state-of-the-art semiconductor technologies.

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APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0605140D8Z: *Trusted Foundry*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	50.808	35.512	35.539	-	35.539
Current President's Budget	53.014	35.512	-	-	-
Total Adjustments	2.206	-	-35.539	-	-35.539
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	3.500	-			
• SBIR/STTR Transfer	-1.232	-			
• Other Program Adjustments	-0.062	-	-35.539	-	-35.539

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: Trusted Foundry: *P014*		
Congressional Add: *Trusted Foundry*	10.000	-
Congressional Add Subtotals for Project: Trusted Foundry	10.000	-
Congressional Add Totals for all Projects	10.000	-

Change Summary Explanation

The Trusted Foundry PE 0605140D8Z transfers to the Defense Logistics Agency in FY 2012.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Office of Secretary Of Defense			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0605140D8Z: *Trusted Foundry*	PROJECT Trusted Foundry: *P014*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Trusted Foundry: *P014*	53.014	35.512	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Department of Defense (DoD) and National Security Agency (NSA) require uninterrupted access to state-of-the-art design and manufacturing processes to produce custom integrated circuits designed specifically for military purposes. In accordance with DoD Instruction 5200.39, integrated circuits in critical/essential systems need to be procured from trusted sources in order to avoid counterfeit, tampered, or sabotaged parts. Worldwide competition from foreign state-subsidized manufacturing facilities (foundries) is making fabless semiconductor companies the norm in the United States. Sophisticated off-shore design and manufacturing facilities with engineering labor rates vastly less than U.S. engineering rates have resulted in outsourcing of electronics components and integrated circuits. These trends threaten the integrity and worldwide leadership of the U.S. semiconductor industry by eliminating many domestic on-shore suppliers and reducing access to trusted fabrication sources for advanced technology. These trends are of acute concern to the defense and intelligence community. Secure communications and cryptographic applications depend heavily upon high performance semiconductors where a generation of improvement can translate into a significant force multiplier and capability advantage. Important defense technology investments and demonstrations carry size, weight, power, and performance goals that can only be met through the use of the most sophisticated semiconductors.

The Trusted Foundry program provides DoD and NSA with trusted state-of-the-art microelectronics design and manufacturing capabilities necessary to meet the performance and delivery needs of their customers. The program will also provide the Services with a competitive cadre of trusted suppliers that will meet the needs of their mission critical/essential systems for trusted integrated circuit components. NSA, in their role as the Trusted Access Program Office, has successfully looked to commercial sources to satisfy their requirements. Access to trusted suppliers is imperative to ongoing and future DoD/NSA systems, and most centrally, Trusted Foundry access is absolutely necessary to meet secure communication and cryptographic needs for state-of-the-art semiconductor technologies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: Trusted Foundry	43.014	35.512	-
FY 2010 Accomplishments: Additional integrated circuits were provided to the U.S. Army, Navy, Air Force, and Defense Advanced Research Projects Agency to satisfy new and on-going program requirements. Application-Specific Integrated Circuit design efforts were initiated and completed to include leading-edge designs in state-of-the-art process technologies for military applications and the trusted design flow was enhanced for defense designers. New circuit cores were converted to trusted format across the full military specification environment and made available to the Trusted Foundry customers (programs, contractors, etc.). New equipment paradigms for trusted leading-edge process technologies for low volume and secure manufacturing, including chemical vapor deposition techniques were enhanced. New process paradigms at 32/22nm for trusted fabrication technologies were evaluated for implementation. The first multi-project wafer run at the 32nm node was initiated. New commercial and non-commercial			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
sources and methodologies for trusted components and services within the complete supply chain were accredited and are now available to the defense community. ***FY 2011 Plans:*** Establish a cadre of trusted suppliers for the critical trusted components and services needed for appropriate Defense systems. Enhance Trusted Foundry products to include key specialty processes requested by DoD programs, such as high voltage, extreme environments, and embedded non-volatile memory. Enhance trusted design activities to encompass new processing capabilities. Establish a line of trusted catalog components that can be purchased by Defense contractors.			
Accomplishments/Planned Programs Subtotals	43.014	35.512	-

	FY 2010	FY 2011
Congressional Add: Trusted Foundry	10.000	-
FY 2010 Accomplishments: Began the process to enable a new advanced process node in the Trusted Foundry. Completed baseline experiments for determining scalability of extrinsic base process for high performance hetero-junction bipolar transistor (HBT) and ability to implement self-aligned features in a new device structure. First pass design of advanced test chip for merged bipolar/complementary metal-oxide-semiconductor process. Developed prototype simulation kit for evaluation of preliminary physical experiments.		
Congressional Adds Subtotals	10.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

NSA has negotiated a "commercial" capacity type IDIQ contract with IBM with 10 one-year options. IBM will provide custom and semi-custom integrated circuit parts in production and prototype quantities to meet DoD/NSA leading-edge integrated circuit needs. Additional suppliers of leading-edge production processes will be developed and accredited as Trusted Suppliers by the DMEA. This will provide program managers the flexibility to acquire trusted parts appropriate to the minimum risk and vulnerability of their particular system needs. Process IP will be obtained from trusted suppliers to assure the availability of parts over the long term.

E. Performance Metrics

N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Office of Secretary Of Defense		DATE: February 2011
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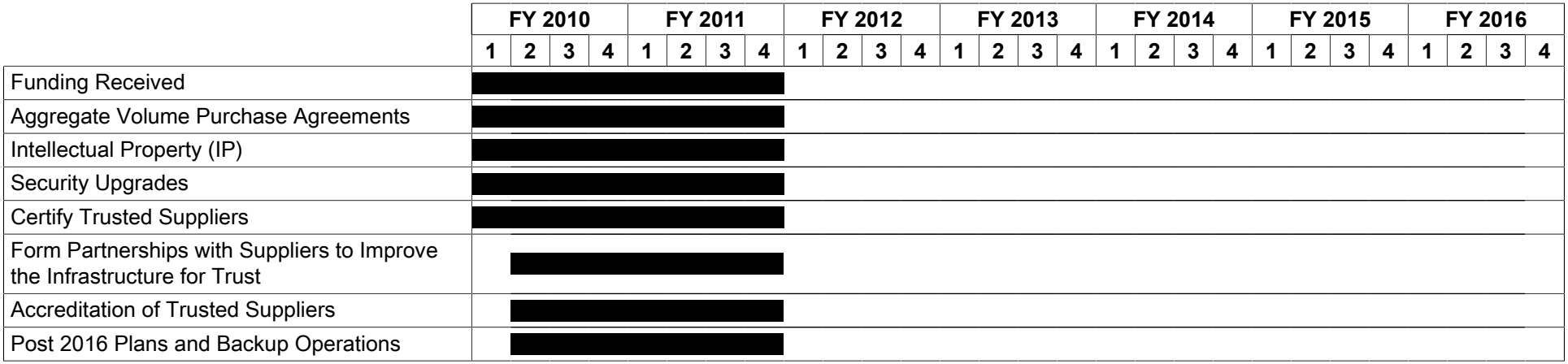

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Office of Secretary Of Defense		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0605140D8Z: *Trusted Foundry*	**PROJECT** Trusted Foundry: *P014*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Funding Received	1	2010	4	2011
Aggregate Volume Purchase Agreements	1	2010	4	2011
Intellectual Property (IP)	1	2010	4	2011
Security Upgrades	1	2010	4	2011
Certify Trusted Suppliers	1	2010	4	2011
Form Partnerships with Suppliers to Improve the Infrastructure for Trust	2	2010	4	2011
Accreditation of Trusted Suppliers	2	2010	4	2011
Post 2016 Plans and Backup Operations	2	2010	4	2011