Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force											Date: February 2015	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602788F / *Dominant Information Sciences and Methods*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	-	136.885	147.749	164.909	-	164.909	163.132	159.658	164.707	168.102	Continuing	Continuing
625315: *Connectivity and Protection Tech*	-	56.969	65.675	72.746	-	72.746	72.130	68.943	74.675	76.224	Continuing	Continuing
625316: *Info Mgt and Computational Tech*	-	25.626	27.511	31.187	-	31.187	34.020	32.747	31.809	32.466	Continuing	Continuing
625317: *Information Decision Making Tech*	-	15.631	13.191	20.485	-	20.485	14.932	14.855	14.193	14.486	Continuing	Continuing
625318: *Operational Awareness Tech*	-	20.378	20.650	19.235	-	19.235	20.342	22.049	22.553	23.012	Continuing	Continuing
62OMMS: *Research Site Support*	-	18.281	20.722	21.256	-	21.256	21.708	21.064	21.477	21.914	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program develops enterprise-centric information technology for the Air Force. Advances in enterprise-centric information technologies are required to increase warfighter readiness and effectiveness by providing the right information, at the right time, in the right format, anytime, anywhere in the world. The Connectivity and Protection Tech project provides the technologies for multi-level, secure, seamless networks; advanced communications processors; anti-jam and low probability of intercept techniques, as well as technologies that deter any adversary from attacking computer systems while allowing access to, presence on, manipulation of, and operational effects on adversary computer systems. This project also develops the technology base for the next generation of ultra-wide-bandwidth, multi-channeled, air- and space-based communications networks. The Information Management and Computational Tech project provides advances in information management and dissemination technologies to ensure the delivery of high-quality, timely, secure information to the warfighter, and develop technologies to produce both advanced on demand computational processing and computer architectures with greater capacity and sophistication for addressing dynamic mission objectives under constraints imposed by Air Force systems. The Information Decision Making Tech project develops the technology to support the commander and staff's ability to command all viable options to achieve desired effects across the full spectrum of operations. The Operational Awareness Tech project develops technologies that improve their capability to generate, process, manage, fuse, exploit, interpret, and disseminate timely and accurate information. The Research Site Support project provides the Rome Research Site infrastructure at Rome, NY and provides for the continued operations of all Rome Research Site properties, buildings, and services necessary for the research mission. This program has been coordinated through the Department of Defense (DoD) Science and Technology (S&T) Executive Committee process to harmonize efforts and eliminate duplication.

This program is in Budget Activity 2, Applied Research because this budget activity includes studies, investigations, and non-system specific technology efforts directed toward general military needs with a view toward developing and evaluating the feasibility and practicality of proposed solutions and determining their parameters.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force					Date: February 2015
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 2: *Applied Research*		R-1 Program Element (Number/Name) PE 0602788F / *Dominant Information Sciences and Methods*			
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	138.145	147.789	167.051	-	167.051
Current President's Budget	136.885	147.749	164.909	-	164.909
Total Adjustments	-1.260	-0.040	-2.142	-	-2.142
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.260	-			
• Other Adjustments	-	-0.040	-2.142	-	-2.142

Change Summary Explanation

Decrease in FY16 Other Adjustments is due to higher DoD priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 2	R-1 Program Element (Number/Name) PE 0602788F / *Dominant Information Sciences and Methods*	Project (Number/Name) 625315 / *Connectivity and Protection Tech*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
625315: *Connectivity and Protection Tech*	-	56.969	65.675	72.746	-	72.746	72.130	68.943	74.675	76.224	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Air Force requires technologies that enable assured, worldwide communications among all elements of the force. These communication technologies will provide en-route and deployed reach-back communications for distributed collaborative military operations. This project provides the technologies for secure, self-configuring, self-healing, seamless networks; advanced communications processors; anti-jam and low probability of intercept communications techniques; agile, dynamic policy based network management capabilities; and modular, programmable, low-cost software radios. This project also develops both the technology base for ultra-wide bandwidth, multi-channeled air- and space-based communications networks on and between platforms. In addition, the Air Force requires technologies to deliver a full range of options in cyberspace on par with air and space dominance in each of the areas of cyber-attack, cyber defense, and cyber support to achieve the strategic capability of cyber dominance. This project provides the technologies required to successfully deter any adversary from attacking computer systems anytime, anywhere by ensuring the Air Force's ability to: access, maintain presence on, and deliver effects to adversary systems; detect, defend, and respond to attacks on friendly computer systems as well as provide forensic analysis concerning those attack attempts; and provide cyber situational awareness to Air Force commanders.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Title: Advanced Connectivity Technologies	25.154	23.806	28.239
Description: Develop improved, survivable, higher bandwidth communications, networking, and signal processing technologies to provide secure, adaptive, covert, anti-jam, and assured global battlespace connectivity tailored to anti-access and area-denial environments and contested operations.			
FY 2014 Accomplishments: Completed development of techniques to fuse disparate IP-based airborne radio networks into a single, Joint Aerial Layer Network (JALN)-responsive airborne mesh. Developed techniques to reduce information bandwidth requirements by 3 orders of magnitude allowing for real-time operations using existing communication links. Developed key technologies to address issues in dealing with the extremely dynamic nature of the tactical edge/airborne network environment. Continued effort in V/W SATCOM technology by developing an attenuation prediction model for V and W band frequencies. Demonstrated quantum key communications in quantum noise (KCQ) over a free space link to test key distribution protocols in a real environment. Performed synthetic aperture radar (SAR) data optical relay flight test, transmitting data through a 2.5 Gb/s radio frequency (RF) link over 30 Km. Developed capability to measure V/W band attenuation with over 30 dB of dynamic range using the sun as a beacon. Measured attenuation statistics for V and W band (72.5 and 82.5 GHz) - the first attenuation statistics measured for frequencies greater than 50 GHz. Used field tests to verify the benefits in channel capacity of multiple input, multiple output (MIMO) systems.			
FY 2015 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625315 / *Connectivity and Protection Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Complete an accelerated waveform development process and associated tools. Demonstrate the digital portion of a 32 X 32 MIMO system. Continue ongoing 81 to 86 GHz Traveling Wave Tube Amplifier (TWTA) development. Complete bench-top demonstration of quantum key distribution (QKD) in concert with a multi-access lasercom system. Initiate research to investigate the use of autonomy on small unmanned aircraft system platforms to support (semi-)autonomous distributed cooperative airborne tactics using airborne networks. Initiate the development and integration of waveform components, tools, and hardware into an innovative ecosystem for affordable rapid waveform development over a continuum of commercial-off-the-shelf (COTS)/ government-off-the-shelf (GOTS) software defined radio frequency architectures. Develop a waveform starter kit for multi-mission communications and radar. Perform dual site diversity radiometric testing for mitigating weather limitations. Continue development of automated process to port communication models to real-time hardware in the loop. Continue both development of secure video distribution over tactical internets on demand and design of distributed, cross-layer protocols for cognitive radio ad hoc networks with decentralized control. Continue the development of a modular airborne network bridge for the creation of an air-air/air-ground secure tactical intranet. Continue the development of wideband, long range, rapidly deployable aerial backbone network for command, control, intelligence, surveillance, and reconnaissance (C2ISR) dissemination. ***FY 2016 Plans:*** Complete development of automated process to port communication models to real-time hardware in the loop. Continue both development of secure video distribution over tactical internets on demand and design of distributed, cross-layer protocols for cognitive radio ad hoc networks with decentralized control. Continue the development of a modular airborne network bridge for the creation of an air-air/air-ground secure tactical intranet. Continue the development of wideband, long range, rapidly deployable aerial backbone network for command, control, intelligence, surveillance, and reconnaissance (C2ISR) dissemination. Continue research to advance autonomy in unmanned air vehicles to support distributed cooperative airborne tactics using advanced communications techniques. Continue the development and integration waveform components, tools, and hardware into an innovative ecosystem for affordable rapid waveform development over a continuum of COTS/GOTS software defined radio frequency architectures. Initiate development of advanced hardware for multi-mission agile RF capability. Perform analysis of radiometric site diversity data for rain cell sizes and distribution of rain cells.			
Title: Cyber Defense Technologies ***Description:*** Develop cyber defense and supporting technologies to detect, defend, and respond to attacks on computer systems as well as provide forensic analysis concerning the attacks. ***FY 2014 Accomplishments:*** Developed a solution for technology-enforced policy and non-cloud detonation chamber solution. Extended IP hopping technology from IPv4 to IPv6, and enhanced the technology with situational awareness sensor feed and interface with cyber C2 system. Extended configuration-based agility/moving target capability from centralized to decentralized architecture, and added support for IPv6, additional device families, IP hopping control, limited quality of service, firewall verification, and improved resiliency.	14.463	17.860	20.906

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625315 / *Connectivity and Protection Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Extended polymorphic enclave technology from hypervisor-based host installation to external in-line device, added management console and improved policy flexibility, and gateway capability for access outside of the polymorphic network. Developed a capability for self-regenerative code. Continued development in the areas of Survive and Recover, Trusted and Resilient Systems and Secure End-to-End Publish and Subscribe, under the University Center of Excellence (UCoE) in Assured Cloud Computing (ACC). Completed early stage design and development of a framework to support trusted execution of cloud applications using diagnostics to test trustworthiness. Developed prototype survivability architecture for continuous mission-oriented assessment and management that is planned to be validated at Eglin Air Force Base's simulated Air Operations Center environment. ***FY 2015 Plans:*** Initiate research in Cyber Intelligence, Surveillance, and Reconnaissance (ISR) technologies to support integrated Signals Intelligence (SIGINT)-Cyber operations. Initiate development of innovative embedded system security techniques that protect critical high-value resources; initial use-case focus is command and control functions of unmanned aerial systems. Continue interaction with the University Center of Excellence (UCoE) in Assured Cloud Computing (ACC) and collect performance results for a framework to assess cloud trustworthiness. Initiate research for enhanced cyber situational awareness through the automated assessment of mission execution through the analysis of network traffic flows. ***FY 2016 Plans:*** Initiate development of a desktop and mobile variant of a cyber detonation chamber; a critical component for mission assurance. Continue enhancement, maturation, testing, and demonstration of Cyber Agility technologies through exercises and other user-focused venues toward the objective of transition. Expand Cyber ISR research to further focus on location and processing of data of interest. Continue interaction with the UCoE ACC. Continue research for enhanced cyber situational awareness through the automated assessment of mission execution through the analysis of network traffic flows.			
Title: Cyber Offense Technologies ***Description:*** Develop offensive cyber operations technologies to access, maintain presence on, and deliver effects to adversary systems. ***FY 2014 Accomplishments:*** Developed and tested blind signal classification and interference mitigation techniques for software-defined signal processing in unlicensed spectrum and anti-access area-denial (A2/AD) scenarios of dense spectrum conflict. Developed and tested algorithms, hardware, software and techniques for prosecuting low-frequency signals of interest (SOI). Initiated design of a highly configurable cyber simulation environment which produces high fidelity cyber telemetry for analysis. Initiated development of distributive and disruptive cyber technologies capable of achieving non-kinetic military objectives. Transitioned software to provide new capabilities to Big Safari program office (details classified). Developed SOA components for the Cyber Mission Framework to	16.930	18.380	18.291

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625315 / *Connectivity and Protection Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
enable cross-service tool operation, mission reporting, and cyber use control constructs. Initiated red-teaming analysis of this framework. Continued developing techniques for the exploitation of signals of interest. ***FY 2015 Plans:*** Developed and tested blind signal classification and interference mitigation techniques for software-defined signal processing in unlicensed spectrum and anti-access area-denial (A2/AD) scenarios of dense spectrum conflict. Developed and tested algorithms, hardware, software and techniques for prosecuting low-frequency signals of interest (SOI). Initiated design of a highly configurable cyber simulation environment which produces high fidelity cyber telemetry for analysis. Initiated development of distributive and disruptive cyber technologies capable of achieving non-kinetic military objectives. Transitioned software to provide new capabilities to Big Safari program office (details classified). Developed SOA components for the Cyber Mission Framework to enable cross-service tool operation, mission reporting, and cyber use control constructs. Initiated red-teaming analysis of this framework. Continued developing techniques for the exploitation of signals of interest. ***FY 2016 Plans:*** Initiate research on automation of cyber defense in order to survive in a contested cyber environment. Design, develop, and demonstrate tools and techniques to withstand cyber-attacks and to sustain (survive) or recover critical functions. Perform independent verification and validation (IV&V) as well as offensive-defensive red teaming of general-purpose electronic support (ES) and electronic attack (EA) software subsystems to enable offensive cyber operations via radio frequency (RF)-based methods. Continue to develop technologies to remain current with new waveforms and signals. Continue service oriented architecture component development for use in the Air Force Lifecycle Management Center (AFLCMC) Cyber Mission Platform (CMP). Continue red-teaming new components to improve security. Continue to increase automation and develop a software only processing capability for the exploitation of special signals of interest.			
Title: Survivability Technologies ***Description:*** Develop methods and technologies for controlled operation of information systems during attacks and fault conditions, minimizing vulnerabilities of cyber attacks, and guaranteeing the accuracy and correctness of data and codes. ***FY 2014 Accomplishments:*** Completed development of defensive cyber technologies to increase system survivability while under a cyber-attack. Demonstrated successful integration of four cyber S&T technologies into a singular system-of-systems providing cyber C2, SA, and defensive capabilities. ***FY 2015 Plans:***	0.422	0.235	0.803

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625315 / *Connectivity and Protection Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Initiate research to orchestrate the dynamic employment of multiple survive and recover defense components, configurations, and services at the system level to assure and empower the mission. ***FY 2016 Plans:*** Continue research to orchestrate the dynamic employment of multiple survive and recover defense components, configurations, and services at the system level to assure and empower the mission; focus on hiding mission essential functions (MEFs) in the cloud and rapidly recovering MEFs using the vast computing cloud resources.			
Title: Cyber Technologies for Spectrum Warfare ***Description:*** Develop technologies combining electronic warfare, signals intelligence (SIGINT), communications, and cyber technologies that provide synergistic access, exploitation, and effects across air and cyber domains in congested and contested environments. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** Initiate development of active and passive methods to locate, acquire, and process data and signals of interest. ***FY 2016 Plans:*** Continue development of active and passive methods to locate, acquire, and process data and signals of interest.	-	5.394	4.507
Accomplishments/Planned Programs Subtotals	56.969	65.675	72.746

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 2	R-1 Program Element (Number/Name) PE 0602788F / *Dominant Information Sciences and Methods*	Project (Number/Name) 625316 / *Info Mgt and Computational Tech*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
625316: *Info Mgt and Computational Tech*	-	25.626	27.511	31.187	-	31.187	34.020	32.747	31.809	32.466	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Air Force requires the capability to maximize the value, sharing, management, and use of its information and information assets in achieving its mission objectives as the importance of information grows in the current net-centric environment. Technology development in this project must be capable of taking advantage of future net-centric environments including new structured and ad hoc processes in response to rapidly changing warfare challenges. Advances in robust information management focus on quality of service and flow of information within the enterprise, information transformation and brokering, secure information sharing across and among domains, and collaboration of workflow within the enterprise. Technologies addressed in this project include the ability to globally share, discover, and access information across organizational, functional, and coalition boundaries and between and among domains, the timely delivery of information to tactical assets, the tailoring and prioritization of information based on mission needs and importance, and the scaling, robustness, and collaboration features required of the Air Force net-centric information management environment. In addition, the Air Force requires the development of superior, intelligent, on-demand computing to enable information superiority. Technology development in this project focuses on producing: computer architectures with greater capacity and sophistication for addressing constrained, dynamic mission objectives; "game-changing" computing power to the warfighter; disruptive computing power at the tactical edge and for federated grid services; and interactive and real-time computing improving the usability of high-performance computing to the Air Force. It includes technologies in computational sciences and engineering, computer architectures, and software intensive systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Title: Dissemination Technologies	4.690	9.152	9.455
Description: Investigate and develop technologies for decision quality information dissemination services via publish, subscribe, and query across the Global Information Grid (GIG) to enterprise and tactical assets and coalition partners.			
FY 2014 Accomplishments: Completed research to develop and demonstrate resource-aware information management services that are responsive to the information needs of active missions by ensuring delivery of the most relevant, high priority information to the warfighter. Initiated development of embedded information management software services and adaptable user interfaces that will automate sensor tasking based on sensor availability and multiple consumer information needs. Continued development of information management services embedded with the sensor that will boost the effective communication bandwidth available to tactical users and link pilots, remotely piloted aircraft (RPA), and ground assets in the field.			
FY 2015 Plans: Complete development of information management services embedded with the sensor that will boost the effective communication bandwidth available to tactical users and link pilots, RPA, and ground assets in the field. Continue development			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625316 / *Info Mgt and Computational Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
and design of cloud-based information management services for provisioning sufficient computational power for high demand semantic processing of large data sets within mission timeline constraints. Continue development of responsive autonomous control for tactical sensor control. Initiate the development of highly scalable mission oriented middleware that semantically characterizes and contextualizes information to automatically identify and deliver mission relevant information to consumers in federated environments. Initiate the development of information management capabilities that securely bridge the gaps between enterprise and tactical domains for increased shared situational awareness (SA) across the theater of war for targeting and force protection operations. ***FY 2016 Plans:*** Continue research into scalable mission responsive data systems by mapping mission requirements to information flows. Continue development and design of cloud-based information management services for provisioning sufficient computational power for high demand semantic processing of large data sets within mission timeline constraints. Continue development of responsive autonomous control for tactical sensor control. Continue the development of highly scalable mission oriented middleware that semantically characterizes and contextualizes information to automatically identify and deliver mission relevant information to consumers in federated environments. Continue the development of information management capabilities that securely bridge the gaps between enterprise and tactical domains for increased shared situational awareness (SA) across the theater of war for targeting and force protection operations.			
Title: Processing Technologies ***Description:*** Develop automatic and dynamically reconfigurable, affordable, scalable, distributed petaflop processing technologies for real-time global information systems. ***FY 2014 Accomplishments:*** Developed a general processing unit (GPU) implementation of a neural simulator based on Synchronous Matching Adaptive Resonance Theory (SMART), and the initial capability of multi-INT association of heterogeneous data via a SMART framework. Demonstrated the Air Force Research Laboratory Secure Processor chip on its test board with morphing opcodes, hardware AES encryption with key storage, and other security features. Continued research into computational models or approaches for increased system processing efficiency. Developed new approaches to coupling/processing quantum qubits. ***FY 2015 Plans:*** Continue development of advanced computing techniques, enabling superior information processing for Air Force warfighters through in-house research. Improve on-board processing to include real-time dissemination of 3D situational awareness of the battlespace. Investigate the information management techniques necessary for an operator to publish, query and subscribe to services that enable the information to be provided to only those operators that require it without overloading existing communication links. Investigate the use of neuromorphic neural network techniques for real-time learning about unanticipated	10.867	7.156	6.720

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625316 / *Info Mgt and Computational Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
events (hypothesis discovery and testing). Initiate research to develop and demonstrate embedded high performance computing systems and integrate bio-inspired embedded computing hardware that delivers a set of autonomous sensing capabilities for Air Force Intelligence, Surveillance, and Reconnaissance (ISR) missions in the contested and A2/AD environments. ***FY 2016 Plans:*** Continue research to develop and demonstrate embedded high performance computing systems and integrate bio-inspired embedded computing hardware that delivers a set of autonomous sensing capabilities for Air Force ISR missions in the contested and A2/AD environments. Develop autonomous methods of discovering salient events by exploiting disparate sensor data via bio-logically inspired neuromorphic learning algorithms. Develop algorithms that automatically make associations of disparately sensed signatures for a given event(s). Develop the algorithms so that they exploit low level information (raw data) from ISR sensors. Fabricate the enhanced AFRL Secure Processor.			
Title: Cross Domain Technologies ***Description:*** Develop secure cross domain discovery services for access to services outside of existing domain. Develop the tools to allow collaboration of workflows required by the Air Force net-centric information management environment. ***FY 2014 Accomplishments:*** Delivered a suite of new collaboration capabilities for US and Coalition Multiple Levels of Security (MLS) environments producing four new cross-domain collaboration tools in: Voice over IP (VoIP) / Video Teleconferencing; Secure Full Motion Video (FMV) streaming; Automated & resilient data content inspection; Global trusted remote monitoring & management. Developed analytics to provide network and user behavioral information that relate to risk management decisions for cross domain solutions (CDS). ***FY 2015 Plans:*** Develop an innovative approach to malicious code detection by running suspect files within a virtual environment and comparing the execution with normal application behaviors. Develop a secure foundation for mobile devices that will act as a foundation for a multiple levels of security (MLS) mobile device. Develop a cross-domain video teleconference (VTC) capability that allows VTC participants to be on networks of differing classification. Develop automated techniques to correlate network events to CDS policy configurations allowing for automated remediation of attacks. ***FY 2016 Plans:*** Develop techniques to allow rapid cross security domain enablement of IT systems. Continue development of a secure MLS mobile foundation. Continue development of malicious code detection techniques based upon runtime performance of applications.	5.428	3.421	5.772
Title: Advanced Architectural Technologies ***Description:*** Develop the architectural mechanisms that form the basis for predictable software and high assurance systems.	4.641	7.782	9.240

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625316 / *Info Mgt and Computational Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
FY 2014 Accomplishments: Emulated 40,000 neurons on neuromorphic processors with 200X more efficiency than state of the art conventional processing. Demonstrated model-based auto-code generation (analyze concurrent implementability and generates multi-threaded code) for polysynchronous system. Demonstrated multi-core worst-case analysis, scheduling methodology and deployment optimization for real-time systems, showing a 50% performance increase for real-time multi-core system with 24% increase in processor capacity. ***FY 2015 Plans:*** Complete creation of a trade space analysis tool used to determine feasibility and scale of autonomy on mobile systems. Complete demonstration of 3D stacking of logic chips on other logic chips while using standard processor fabrication lines. Initiate development of theory and techniques to continuously validate / reestablish trust utilizing mission objectives & warfighter perspectives (environment). Develop a continuous calculus of trust (verification & validation) as the system executes the mission. Initiate research of trusted and resilient systems using evolutionary and formal approaches. Develop automated repairs that are trusted, understandable and maintainable by humans. Initiate research for embedded processor to address the middle range computing requirements and having significant cyber hardening features. Initiate research to develop new, unconventional processing technologies with greater than10 X conventional processing energy efficiencies to allow efficient co-processing on-board. ***FY 2016 Plans:*** Develop new approaches to building trusted and resilient systems. Develop theory and techniques for trust of inherently resilient systems. Develop a strategic root of trust. Develop resiliency techniques such as artificial diversity. Develop containment areas for execution of untrusted software. Develop new hardware architectures that support trusted and resilient systems. Continue research for embedded processor to address the middle range computing requirements and having significant cyber hardening features. Develop and mature technologies for neuromorphic co-processing. Develop and mature memristive technologies for use in reducing the size weight and power of conventional processing while providing intrinsic, hardware based cyber security features for encryption, anti-tamper and unique identification. Develop an algorithm and system operation control for continuous, dynamic autonomous operations. Develop a processor to achieve universal quantum computation.			
Accomplishments/Planned Programs Subtotals	25.626	27.511	31.187

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625316 / *Info Mgt and Computational Tech*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 2	R-1 Program Element (Number/Name) PE 0602788F / *Dominant Information Sciences and Methods*	Project (Number/Name) 625317 / *Information Decision Making Tech*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
625317: *Information Decision Making Tech*	-	15.631	13.191	20.485	-	20.485	14.932	14.855	14.193	14.486	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Air Force requires advances in technologies enabling the effective execution of military objectives that will vastly improve the ability to support the commander and staff's ability to command all viable options to achieve desired effects across the full spectrum of operations (air, space, and cyberspace) at all levels of war (strategic, operational, and tactical) and during all phases of conflict. Technology development in this project includes anticipatory decision support and course of action development, planning, scheduling and assessment, and the real-time effective portrayal of complex data sets.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Title: Campaign Planning Technologies	7.596	6.517	5.918
Description: Develop advanced monitoring, planning, and assessment technologies enabling aerospace commanders to develop effects-based campaigns. ***FY 2014 Accomplishments:*** Continued development of decision theory and continued the development of a capability for autonomous adaptive re-planning in a real-time simulation environment using a case-based planning system. Initiated development of evaluation services to determine operational planning feasibility. Completed investigation of full-spectrum, quantitative analysis techniques that aid operational assessor's ability to link actions to effects to desired objectives. Continued development of robust autonomous control algorithms for heterogeneous and distributed assets capable of learning in dynamic environments. Initiated research and development in cooperative agency and group transfer learning. ***FY 2015 Plans:*** Continue development of robust autonomous control algorithms for heterogeneous and distributed assets capable of learning in dynamic environments. Complete research in cooperative agency and group transfer learning. Initiate research to develop a validation and verification methodology such that an agent acting autonomously will never act outside of a prescribed policy. ***FY 2016 Plans:*** Continue research for trust and verification and validation (V&V) for autonomous systems; develop a validation and verification methodology such that an agent acting autonomously will never act outside of a prescribed policy. Continue development of robust autonomous control algorithms for heterogeneous and distributed assets capable of learning in dynamic environments. Initiate research for robust autonomous system capable of self-adjustment and active learning under unforeseen circumstances. Initiate development of the living plan concept; decision theory and autonomous adaptive re-planning in a real-time.			
Title: Command and Control System Technologies	8.035	6.674	14.567

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625317 / *Information Decision Making Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Description: Investigate, analyze, and develop technologies for planning, execution, and automatic rapid reconfiguration of distributed intelligent and integrated command and control (C2) information systems to achieve the commander's intent throughout varying crisis levels. ***FY 2014 Accomplishments:*** Continued in-house and university development of planning, decision making, and course of action (COA) tools supporting the commander's ability to exercise a wide range of command and execution options for Air Force assets. Developed technology to assist in the creation of COAs based on past experiences through the retrieval and matching of prior actions against current needs, then modifying these actions to adapt to new situations and world states. Initiated C2 capability that orchestrates the dynamic employment of multiple Moving Target Defense (MTD) components, configurations, and services across the enterprise to assure mission success. Continue development of fundamental visualization components that address existing and forth coming visualization problems for the Air Force, such as: live video over 3D terrain, radial mission map plots, semantic dataset overview, semantic dataset merging and filtering, thin-client point cloud visualization, server based point cloud distribution and analysis, and structured graph navigation. Automated space and intelligence processes to deliver web-based tools to space operations centers; research Bayesian techniques utilizing causal and physics-based modeling and simulation, as well as integer programming for enhanced course of action analysis. ***FY 2015 Plans:*** Characterize MTD attributes and de-conflict network and system resources across competing defenses. Complete development of fundamental visualization components that address existing and forth coming visualization problems for the Air Force, such as: live video over 3D terrain, radial mission map plots, semantic dataset overview, semantic dataset merging and filtering, thin-client point cloud visualization, server based point cloud distribution and analysis, and structured graph navigation. Initiate research on new concepts for space operations, such as the applicability of crowdsourcing methods in the space C2 domain; design and implement an Electromagnetic Spectrum Common Operational Picture (EMS-COP). ***FY 2016 Plans:*** Demonstrate planning, decision making, and COA tools supporting the commander's ability to exercise a wide range of command and execution options for Air Force assets. Demonstrate automated COA generation from an automated intelligence indicator. Continue research and development of automated decision aids for obtaining timely assessments of executing operations within and across the air, space and cyber domains. Continue research for the orchestration of the dynamic employment of multiple moving target defense components, configurations and services across the information enterprise to ensure the mission.			
Accomplishments/Planned Programs Subtotals	15.631	13.191	20.485

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625317 / *Information Decision Making Tech*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 2	R-1 Program Element (Number/Name) PE 0602788F / *Dominant Information Sciences and Methods*	Project (Number/Name) 625318 / *Operational Awareness Tech*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
625318: *Operational Awareness Tech*	-	20.378	20.650	19.235	-	19.235	20.342	22.049	22.553	23.012	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Air Force requires technologies that improve and automate the capability to generate, process, manage, fuse, exploit, interpret, and disseminate timely and accurate information. This project provides not only a network-centric, collaborative intelligence analysis capability that enables the fusion of multi-intelligence and sensor sources to provide timely situational awareness, understanding, and anticipation of the threats in the battlespace, but also the advanced, novel exploitation technologies needed to intercept, collect, locate, and process both covert and overt raw data from intelligence and sensor sources. It leads the research, discovery, and development of technology that enables the fusion of multi-intelligence sources to provide accurate object tracking and identification (ID), situational awareness, understanding, and anticipation of the threats in the battlespace (air, ground, space, and cyber). It also leads in the development of advanced exploitation technologies to maximize the intelligence gained from our adversaries in the areas of spectral detection and geolocation, signal recognition and analysis, and the data tagging, tracking, and tracing via the insertion of secure, imperceptible signal embedding for future fusion and understanding of the information.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Title: Multi-Source Fusion Technologies	13.425	11.038	10.736
Description: Develop higher-level fusion and the enabling text information/knowledge base technologies to achieve situational awareness and understanding at all command levels for dynamic planning, assessment, and execution processes.			
FY 2014 Accomplishments: Developed scalable pattern mining analytics for multi-intelligence data (static and streaming). Initiated development of advanced reasoning tools for use in determining space object characteristics and behavior. Applied pattern learning algorithms against ground threats to space. Developed on-board ("the edge") technologies that track ground targets in real / near real time. The volume of information collected on-board and the necessity of operating in a contested environment requires the development of on-board techniques which in turn enables tactical support of the operators. Developed video-text fusion for Distributed Common Ground Station (DCGS)processing, exploitation, and dissemination (PED) cell operations. Developed a web service (client and web-based applications) that supports the mission and PED management of all AF RPA missions, improving processing time for analysts 60 fold for their most frequently requested product related to patterns of life. Utilizing distributed computing with only 7 nodes, improved search and retrieval performance by a factor of 5 and processing time by a factor of 300 compared to a single desktop. Developed automatic optimization of a tracker against multiple sensor sources. Developed time-based social network analysis metrics, plug and play algorithms for dynamic SNA, pattern discovery and social media analysis.			
FY 2015 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625318 / *Operational Awareness Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Continue in-house and university research dealing with the information fusion using multi-source intelligence and sensor feeds to advance the Air Force capability to anticipate the variety of threats from the ground, air, and cyber domains. Apply advanced reasoning techniques to Multi-INT data including SIGINT and space surveillance network (SSN) data to assess space objects and determine significance of activity. Continue the development of on-board technologies that integrate and fuse data from disparate sensors and sources. Integrate on-board passive 3D processing to enhance algorithm performance and provide operators with greatly improved situational awareness. Continue to develop multi-INT fusion for contested environments to aid NASIC/ DCGS analysts. Develop automatic optimization of tracking algorithms across sensors, modes, and regions. Migrate tools and data to distributed (cloud) computing to extract additional performance gains. Provide baseline Activity-Based Intelligence (ABI) capabilities and metrics. Develop distributed cross-document co-reference for automated consolidation of information across documents; a flexible and adaptive platform for layered Network analysis. ***FY 2016 Plans:*** Continue in-house and university research dealing with the information fusion using multi-source intelligence and sensor feeds to advance the Air Force capability to anticipate the variety of threats from the ground, air, and cyber domains. Analyze emerging activities across multiple domains in both tactical and strategic timelines. Continue to apply advanced reasoning techniques to Multi-INT data including SIGINT and SSN data to assess space objects and determine significance of activity. Address the contested operations ISR analysis needs for multi-INT breadth spanning standoff-perishable-hard/soft collection & processing via development of spatial-temporal mining and correlation capabilities across the INT spectrum using both batch and streaming cloud analytics. Provide advanced ABI tools with built-in optimization tailored against operator objectives. Develop techniques to provide a deeper understanding of the meaning of information extracted from open source text, messages, reports, social media and other associated data sources and large scale, time dependent, network based analytics.			
Title: Exploitation Technologies ***Description:*** Develop digital information exploitation technologies for electronic communications and special signals intelligence, imagery, and measurement signatures to increase accuracy, correlation, and timeliness of the information. ***FY 2014 Accomplishments:*** Continued development of a wide variety of exploitation methods to enhance signals exploitation of modern emerging signals expected from contested environments and increase situational awareness. Developed Level Zero Fusion algorithms that operate on disparate data types for the purpose of detection of a given hypothesized event. Developed detection performance analysis, under various signal strengths, that demonstrated Level Zero Fusion outperforms decision level fusion. Derived computational and bandwidth requirements for several implementation use cases of said fusion algorithms. Continued development of tools and techniques for the exploitation of audio signals and identifying contextual gist. Demonstrated accuracy improvements methods using iVector and MHEC for SID/LID, improvements to speech activity detection, classifier evaluations. Initiated development of an automated capability to search and retrieve objects of interest (OOIs) in full motion video (FMV) sources and correlate with	5.188	6.720	6.085

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625318 / *Operational Awareness Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
information from Multi-INT sources. Refined automated analysis & correlation algorithm and tested using data from the 11th Intelligence Squadron. ***FY 2015 Plans:*** Investigate novel algorithms for collection, identification, detection and geo-location of modern emitter signals. Experiment with digital hardware solutions for capturing modern emitter signals Improve feature extraction techniques for performance across multiple data sets, improve modeling efficiency for algorithms, investigate new classifier techniques, and improve performance on cross-platform data. Apply previously developed Level Zero fusion algorithms to recorded data for performance analysis. Derive distributed fusion approach that operates across a network of distributed, multi-modality, sensors. Incorporate machine learning approaches into event discovery. Continue development of an automated capability to search and retrieve objects of interest (OOIs) in full motion video (FMV) sources and correlate with information from Multi-INT sources. ***FY 2016 Plans:*** Develop and experiment with prototype hardware and software solutions for modern emitter signals can improve upon the signal characterization, detection and mitigation of coding and channel condition effects, and advance information extraction capabilities. Research and develop novel measurement and signatures intelligence (MASINT) algorithms and hardware to detect and locate targets of interest in a contested environment. Investigate the combined use of motion detection/tracking and content based imagery retrieval for detecting objects of interest.			
Title: Next Generation Command Technologies ***Description:*** Develop modeling and simulation technologies for the next generation of planning, assessment, and execution environments. ***FY 2014 Accomplishments:*** Developed links and tools to effectively employ cyber, directed energy and electronic warfare weaponry within a target folder environment; designed/developed import utility allowing auto ingestion of DIA Fishnet data (for any country). Formalized the design and development of civilian and military critical infrastructure models and their interconnectivity for modeling cascading effects. ***FY 2015 Plans:*** Develop a CATALiST (Common Automated Targeting Architecture Linking integrated Solution Threads) framework which includes data & user management; security, and role-based access; integrated, re-configurable workflows linking targeting materials production tasks, tools, and dashboards; dashboards enabling real-time management of targeting material production resources;	1.765	2.892	2.414

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 625318 / *Operational Awareness Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
and several automated tools integrated within the framework to increase product quality, shorten the production time, as well as incorporate cyber, electronic warfare, and kinetic targeting options across classified domains. ***FY 2016 Plans:*** Continue to develop a working prototype of the CATALiST framework and associated capabilities, including a framework for data & user management, security, and role-based access; integrated, re-configurable workflows linking targeting materials production tasks, tools, and dashboards; dashboards enabling real-time management of targeting material production resources; and several automated tools integrated within the framework to increase product quality, shorten the production time, as well as incorporate cyber, electronic warfare, and kinetic targeting options across classified domains.			
Accomplishments/Planned Programs Subtotals	20.378	20.650	19.235

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 2	R-1 Program Element (Number/Name) PE 0602788F / *Dominant Information Sciences and Methods*	Project (Number/Name) 62OMMS / *Research Site Support*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
62OMMS: *Research Site Support*	-	18.281	20.722	21.256	-	21.256	21.708	21.064	21.477	21.914	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Air Force Research Laboratory Information Directorate leads the discovery, development and implementation of information science and technology to drive transformation within the Air Force and across the DoD. The focus of the work is to provide the warfighter with the required technology-based capabilities to defend the Nation by unleashing the power of innovative information science and technology to anticipate, find, fix, track, target, engage, and assess anything, anytime, anywhere. Since the site is a single-purpose location not located on a military installation, the Information Directorate has unique requirements for supporting its S&T mission. As the host unit, the directorate is responsible to provide the Rome Research Site infrastructure at Rome, NY and provide for the continued operations of all Rome Research Site properties, buildings, and services necessary for the research mission. Operations include: logistics and communication services, utilities, maintenance of facilities and structures, safety and security of the workforce and visiting researchers, and ensures compliance with the laws, regulations and directives that pertain to site operations. These services are host unit responsibilities and are necessary to provide a safe and effective environment for the Research Site's workforce and mission.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Title: Rome Research Infrastructure	18.281	20.722	21.256
Description: Provide the necessary services and support including, but not limited to: fire inspections, refuse collection, water, electricity, steam, heat, custodial, and grounds maintenance services to the Research Site. Provide the necessary support for the maintenance and repair of Research Site facilities (buildings and other structures), vehicle and equipment lease and security/ safety inspections and services as necessary for compliance and safety/security of personnel and research assets. Provide the Research Site with long haul communications (NETWORX (CONUS)), trunk connectivity and wireless communications.			
FY 2014 Accomplishments: Provided civilian payroll and non-pay costs for installation operations in support of the Rome Research Site property and all onsite personnel. Provided facilities, facility operations, facility sustainment, support equipment, contracts and associated costs to plan, manage and execute the following functions: fire prevention, disaster preparedness, plant operation and purchase of commodity, refuse collection, pavement clearance of snow and ice, grounds maintenance including landscaping, real property special inspections, pest control and custodial services. Provided Real Property Management & Engineering Services, including: (1) Facility Management and Administration and (2) Installation Engineering Services. Facility Management includes public works management costs, contract management, material procurement, facility data management, furnishings management costs, and real estate management. Installation Engineering Services includes annual inspection of facilities, master planning, overhead of planning and design, overhead of construction management, and non-Sustainment and Restoration Modernization (SRM) service			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 62OMMS / *Research Site Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
calls. Provided basic installation communication services, including long haul trunk and telecommunications services. Provided site vehicle lease under GSA for logistics, security, and mission support. ***FY 2015 Plans:*** Provide civilian payroll and non-pay costs for installation operations in support of the Rome Research Site property and all onsite personnel. Provide facilities, facility operations, facility sustainment, support equipment, contracts and associated costs to plan, manage and execute the following functions: fire prevention, disaster preparedness, plant operation and purchase of commodity, refuse collection, pavement clearance of snow and ice, grounds maintenance including landscaping, real property special inspections, pest control and custodial services. Provide Real Property Management & Engineering Services, including: (1) Facility Management and Administration and (2) Installation Engineering Services. Facility Management includes public works management costs, contract management, material procurement, facility data management, furnishings management costs, and real estate management. Installation Engineering Services includes annual inspection of facilities, master planning, overhead of planning and design, overhead of construction management, and non-Sustainment and Restoration Modernization (SRM) service calls. Provide basic installation communication services, including long haul trunk and telecommunications services. Provide site vehicle lease under GSA for logistics, security, and mission support. ***FY 2016 Plans:*** Provide civilian payroll and non-pay costs for installation operations in support of the Rome Research Site property and all onsite personnel. Provide facilities, facility operations, facility sustainment, support equipment, contracts and associated costs to plan, manage and execute the following functions: fire prevention, disaster preparedness, plant operation and purchase of commodity, refuse collection, pavement clearance of snow and ice, grounds maintenance including landscaping, real property special inspections, pest control and custodial services. Provide Real Property Management & Engineering Services, including: (1) Facility Management and Administration and (2) Installation Engineering Services. Facility Management includes public works management costs, contract management, material procurement, facility data management, furnishings management costs, and real estate management. Installation Engineering Services includes annual inspection of facilities, master planning, overhead of planning and design, overhead of construction management, and non-Sustainment and Restoration Modernization (SRM) service calls. Provide basic installation communication services, including long haul trunk and telecommunications services. Provide site vehicle lease under GSA for logistics, security, and mission support.			
Accomplishments/Planned Programs Subtotals	18.281	20.722	21.256

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 2	**R-1 Program Element (Number/Name)** PE 0602788F / *Dominant Information Sciences and Methods*	**Project (Number/Name)** 62OMMS / *Research Site Support*

D. Acquisition Strategy

N/A

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.