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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Office of the Secretary Of Defense **Date:** February 2016

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603133D8Z / <i>Foreign Comparative Testing</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	0.000	21.128	24.782	19.343	-	19.343	24.387	25.066	25.789	26.315	Continuing	Continuing
P313: <i>Foreign Comparative Testing</i>	0.000	21.128	24.782	19.343	-	19.343	24.387	25.066	25.789	26.315	Continuing	Continuing

Note

The Foreign Comparative Testing (FCT) Program Element (PE) 0603133D8Z focuses on Pre-Engineering and Manufacturing Development (Pre-EMD) and Proof of Principle prototypes derived from evaluation of foreign equipment that will provide the U.S. Armed Services, Special Operations Command (SOCOM) and Defense agencies, capabilities to counter emerging threats. FCT's broad reach across our allies and friendly foreign countries enables development of innovative, cost effective, and interoperable solutions for the Department of Defense, Multi-Service and Combatant Command (COCOM) priority requirements. FCT also increases competition, ensuring our personnel have access to the best technology available.

In FY 2015, FCT funding from PE 0605130D8Z was realigned to PE 0603133D8Z for Budget Activity alignment and emphasis on prototyping.

A. Mission Description and Budget Item Justification

The FCT program supports the warfighter by leveraging technologies and equipment developed by allied nations and coalition partners to counter emerging threats, thereby accelerating the DoD acquisition process and lowering development costs. FCT supports Better Buying Power 3.0 by incentivizing the use of prototyping and experimentation in advancing technological solutions to warfighter problems and acts as a hedge against threat developments. FCT enhances interoperability, facilitates international collaboration, increases competition in innovation, and enables more efficient and affordable transition of technologies into acquisition programs of record. Authorized by Title 10, U.S. Code, Section 2350a (g), the FCT program is managed by the Office of Secretary of Defense (OSD) Deputy Assistant Secretary of Defense Emerging Capability & Prototyping (DASD(EC&P)), Comparative Technology Office (CTO). FCT projects are sponsored by the Military Services and USSOCOM. Evaluation processes for project selection include a detailed review to confirm the proposed item addresses valid requirements and DoD priorities, a thorough market survey, and an emphasis on transitioning technologies into current or future programs of record.

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B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	22.000	21.782	21.643	-	21.643
Current President's Budget	21.128	24.782	19.343	-	19.343
Total Adjustments	-0.872	3.000	-2.300	-	-2.300
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.363	-			
• Realignment for Higher Priority Programs	-	-	-2.150	-	-2.150
• FY15 Reprog. for Cancelled Account	-0.009	-	-	-	-
• Other Reprogrammings	-0.500	-	-	-	-
• Economic Assumptions	-	-	-0.150	-	-0.150

Change Summary Explanation

FY 2017 internal realignment reflects funding for higher Departmental priorities and requirements.

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Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603133D8Z / <i>Foreign Comparative Testing</i>	Project (Number/Name) P313 / <i>Foreign Comparative Testing</i>
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
P313: <i>Foreign Comparative Testing</i>	0.000	21.128	24.782	19.343	-	19.343	24.387	25.066	25.789	26.315	Continuing	Continuing

A. Mission Description and Budget Item Justification

The FCT program supports the warfighter by leveraging technologies and equipment from allied nations and coalition partners to counter emerging threats, thereby accelerating the DoD acquisition process and lowering development costs. FCT supports Better Buying Power 3.0 by incentivizing the use of prototyping and experimentation in advancing technological solutions to warfighter problems and acts as a hedge against threat developments. FCT enhances interoperability, facilitates international collaboration, increases competition in innovation, and enables more efficient and affordable transition of technologies into acquisition programs of record. Authorized by Title 10, U.S. Code, Section 2350a (g), the FCT program is managed by the Office of Secretary of Defense (OSD) Deputy Assistant Secretary of Defense Emerging Capability & Prototyping (DASD(EC&P)), Comparative Technology Office (CTO). FCT projects are sponsored by the DoD Services and USSOCOM. Evaluation processes for project selection include a detailed review to confirm the proposed item addresses valid requirements and DoD priorities, a thorough market survey, and an emphasis on transitioning technologies into current or future programs of record.

The FCT program is a catalyst for teaming and other business relationships between foreign and U.S. industries. Many successful FCT projects result in the licensed production of a qualified foreign item in the United States. Other nations recognize the long-term value of such practices for competing in the U.S. Defense market and the resultant strengthening of the "two-way street" in Defense procurement. The result often means the creation of jobs and contributions to local economies throughout the United States. To date, companies from 34 states benefited from FCT projects.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2015	FY 2016	FY 2017
Title: Lightweight M3A1 Recoilless Rifle (Army)	1.318	0.175	-
Description: The M3 Carl Gustaf 84 millimeter (mm) Recoilless Rifle is a reliable, battle -proven, reusable shoulder fired weapon system first introduced to the Army by FCT in 1991. This M3A1 project will eliminate six pounds (28 percent) from the existing weapon by replacing the existing steel tube with a titanium alloy tube, along with other components (bolt, trigger, venturi, and ancillary parts) without changing the firing procedures, operations or ammunition. Since no operational characteristics will be changed, this low-risk approach will produce a lighter weight 84mm shoulder-fired weapon for less time and cost normally required to test and qualify a new weapon system.			
FY 2015 Accomplishments: Vendor provided the detailed M3A1 qualification test plans and schedule. A Cooperative Research and Development Agreement (CRADA) was coordinated between vendor and government to ensure that Export Licenses can be issued for the transportation of the 13 M3A1 test articles to Aberdeen Proving Ground for testing. The CRADA also provided authorization for vendor and			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
the U.S. Government to share test data and design information on the M3A1. Conducted engineering analysis/study, analyzed vendor data, and began technical testing. FY 2016 Plans: Finalize the Integrated Test Plan/Matrix and rounds required for the Lightweight M3A1 qualification test. Conduct Lightweight M3A1 Fatigue and Burst Test. Program Manager (PM) will provide oversight of the operational /user assessment test. Additionally, the PM will prepare the test reports, decision packet and finalized project close-out report.				
Title: Bionic Soldier Power (Army) Description: Tests an energy harvesting system that converts soldier's leg movement into 12+ watts of power for the soldier on the move. The power is used to charge the soldier's equipment batteries, thus significantly reducing the weight of batteries carried and the need to swap batteries, while extending mission time in any operational environment. FY 2015 Accomplishments: Continued testing and making modifications to the prototype energy harvesting system.		1.236	-	-
Title: Photonic Enhancements to the Science and Technology in Electronic Warfare Systems (PHESTES)(Air Force) Description: Conduct lab and field testing of a photonic Electronic Intelligence receiver and a photonic Electronic Countermeasure System. Photonic based technology offers simultaneous wideband spectrum monitoring from one megahertz to 50 gigahertz in a reduced form factor. Current frequency-scanned systems have latency and performance limitations. Some of these limitations can be overcome by utilizing multiple systems in parallel at the cost of increased size, weight, power, and cost. The ability to simultaneously acquire and characterize threat signatures across such a large swath of the electromagnetic spectrum in a reduced form factor potentially provides a new Electronic Warfare (EW) capability across the DoD. FY 2015 Accomplishments: The Air Force Research Laboratory Sensors Directorate (AFRL/SN) at Wright Patterson Air Force Base (WPAFB) conducted solicitation and down-select. Developed test plan, received test articles, and conducted a System Readiness Review and a Test Readiness Review prior to initial performance testing at the Naval Research Lab (NRL). FY 2016 Plans: Complete performance and operational testing at NRL. Transition system to AFRL/SN at WPAFB for performance and operational testing in the Integrated Demonstrations and Applications Laboratory, the anechoic chamber, and the Passive Radio Frequency Outdoor Range. Complete final test report and FCT closeout.		1.585	0.540	-
Title: Field Deployable Whole Blood Collection and Transfusion Set (Air Force)		0.601	0.660	-

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p>Description: The Air Force will test a ruggedized, field-deployable, cost-effective, and mass-producible whole-blood collection and transfusion system that provides leukoreduced, platelet sparing, whole-blood transfusion in austere and far forward settings. The efforts will include modifying the current Food and Drug Administration (FDA) approved/CE marked TerumoBCT Imuflex Whole Blood - Saving Platelet (WB-SP) filter into a WB collection and transfusion kit that improves the current WB collection system and preserves the critical platelet component. The project will test the quality of each blood component under various conditions to ensure applicability to a combat environment. The goal is to produce a qualified product ready for mass production.</p> <p>FY 2015 Accomplishments: Test planning initiated and test article procurement initiated.</p> <p>FY 2016 Plans: Conduct Phase I filtration & storage studies. Initiate Phase II prototype design, development, and initiate Phase III military application testing of blood filter kit.</p>				
<p>Title: Gallium Nitride (GaN) Amplifier Performance and Reliability Investigation of Commercial-Off-The-Shelf (APRICOTS) (Air Force)</p> <p>Description: The GaN APRICOTS project will acquire and test GaN solid-state power amplifiers from a number of foreign vendors with the objectives to investigate cost and performance relative to domestic GaN solid-state power amplifiers. A rigorous, common test methodology will be applied to all test articles to provide for a level-playing-field comparison of the global GaN technology landscape. The goal is to determine the best performing, lowest cost source of GaN solid-state power amplifiers for defense applications.</p> <p>FY 2015 Accomplishments: Initiated Phase I for test article procurement and test planning.</p> <p>FY 2016 Plans: Receive test articles and specialized testing equipment. Conduct Phase II benchmark testing. Initiate Phase III robustness testing.</p>		0.935	0.830	-
<p>Title: Mobile Gunnery Live Fire Monitoring System (MGLFMS) (Navy)</p> <p>Description: The project is testing a Tank and Infantry Fighting Vehicle gunnery training system that wirelessly transmits live audio and video feeds of weapon systems data to a mobile monitoring station. The MGLFMS enables instructors to evaluate crew functions in real-time, make instantaneous corrections, and provides recording capability for detailed after action reviews. Foreign data has shown that training with this system increases probability of gunnery crews placing first round on target. The system provides instructors a tool to evaluate the student's firing solution and improve student's gunnery skills. MGLFMS is currently</p>		1.110	0.594	-

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p>in use by many North Atlantic Treaty Organization countries and supports U.S. Marine Corps Program Manager for Training Systems requirements.</p> <p>FY 2015 Accomplishments: Initiated the fabrication of Phase I test articles during 1Q FY 2015. Received Phase I test articles during 2Q FY 2015. Completed Phase I technical testing during 2Q–4Q FY 2015. Completed Phase II Critical Design Review; form fit testing and verification with U.S. Marine Corps Assault Amphibious Vehicle; and base equipment testing for each system during 4Q FY 2015.</p> <p>FY 2016 Plans: Receive Phase II test articles during 4Q FY 2016. Complete Phase II Performance Testing and Field User Evaluation (FUE) during 4Q FY 2016. Initiate Phase III data collection of U.S. Marine Corps Light Armored Vehicle and M1A1 Main Battle Tank during 3Q–4Q FY 2016.</p>				
<p>Title: Automated Target Recognition (ATR) for MK18 Unmanned Underwater Vehicles (UUV) (Navy)</p> <p>Description: UUV mission planners and adaptive behaviors with ATR functionality are needed to plan/execute UUV missions. Foreign UUV mission planning/post mission analysis software with capability for adaptive behaviors and ATR in an open, service-oriented architecture, will be tested for operational employment to determine if they provide better efficiency and user interfaces than current domestic product.</p> <p>FY 2015 Accomplishments: Performed ATR software evaluation and made software capability improvement/enhancement recommendations.</p> <p>FY 2016 Plans: Use prior year funding to: initiate follow-on testing of ATR capability enhancements to software; complete follow-on testing; write test report and provide information/analysis recommendation to procurement decision authority; and close out project.</p>		1.374	0.000	-
<p>Title: Compact Multi-Diver Heating System (Navy)</p> <p>Description: The SEAL Delivery Vehicle/Shallow Water Combat Submersible (SDV/SWCS) Compact Multi Diver Heating System project seeks to significantly reduce the size and form factor of the SOCOM Multi Diver Heating and Cooling System and to modify it to allow insertion and removal from wet submersibles. This is to provide Navy SEALs operating in very cold water “thermal neutrality” by providing active heating so as to keep divers in thermal balance, improve physical and mental performance, eliminate non-freezing injuries and increase the duration of mission profiles in support of cold water operations. The system is based on vapor compression (Heat Pump) technology and will include enhancements of the vapor compression unit, improve fluid lines to reduce heat loss, and refine liquid circulating garment design and connection fittings to maximize heat transfer efficiency, while ensuring diver agility and comfort.</p>		0.370	0.745	-

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p><i>FY 2015 Accomplishments:</i> Completed independent design analysis and project order for test article.</p> <p><i>FY 2016 Plans:</i> Conduct performance verification of the first prototype and build and test depth-capable Phase II prototype; perform unmanned performance verification for operation at depth at the Hydrospace Lab at Naval Surface Warfare Center, Panama City Division; conduct manned performance tests in a chilled test pool with the system integrated on a Naval Special Warfare wet submersible or representative mockup of the hull form; and, begin construction of up to two production representative systems late FY 2016.</p>				
<p><i>Title:</i> Enhanced Shipboard Navigation Global Navigation Satellite System (Navy)</p> <p><i>Description:</i> This effort will test and evaluate the performance of a multi-constellation Global Navigation Satellite System (GNSS) receiver for U.S. Naval surface ship and airborne applications to provide an additional navigation source to existing military Global Positioning Satellite solutions. This testing will provide valuable insight into the potential benefits of using these signals in a U.S. military environment. Differences in positioning and timing between the foreign GNSS receiver and the platform's principle military Global Positioning System (GPS) receiver may indicate to the platform that it should select an alternate, non-satellite navigation source.</p> <p><i>FY 2015 Accomplishments:</i> Initiated test article procurement for a receiver that leverages foreign navigation satellites as a complement to existing military GPS.</p> <p><i>FY 2016 Plans:</i> Receive first operational prototype, test basic GNSS functionality in collaboration with U.S. Naval Observatory, and initiate prototype test article and software modifications as required.</p> <p><i>FY 2017 Plans:</i> Complete GNSS test equipment modifications; test foreign GNSS receivers as an integrated enhancement to existing navigation systems; and complete final test and close-out reports.</p>		0.530	0.510	0.600
<p><i>Title:</i> Software Defined Networking (SDN) (Navy)</p> <p><i>Description:</i> This project will test commercially available, industry leading, advanced computer network solutions designed with open standards to enhance performance, increase security, and reduce costs for U.S. Navy networks.</p> <p><i>FY 2015 Accomplishments:</i></p>		0.620	0.420	0.140

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
Received Phase I test articles and conducted initial functionality assessment. FY 2016 Plans: Complete testing of prototypes; down-select to best SDN monitoring and control technologies; and begin final testing in late FY 2016. FY 2017 Plans: Complete demonstration of feasibility and benefits of SDN monitoring and control technologies; provide a final demonstration and test report for decision package.				
<p>Title: Hazardous Chemical Exploitation System (United States Special Operations Command (USSOCOM))</p> <p>Description: This project will evaluate extraction equipment that can be used to safely and quickly sample hazardous chemicals in ordnances or storage containers. This will allow Special Operations Forces (SOF) teams to develop validated on-site disposal, neutralization and/or transfer protocols in real-world hostile environments. This project compares current U.S. extraction devices with the existing British "tapping tools."</p> <p>FY 2015 Accomplishments: Procured training munitions, metal containers, chemicals and all related test items. Successfully conducted ancillary support equipment testing and preliminary tool testing of both candidate tools. Verification and validation studies completed. Chemical simulant trials were conducted verifying the effectiveness of existing tactics, techniques and procedures (TTPs). Submitted results from Preliminary Testing.</p> <p>FY 2016 Plans: Perform Test Readiness Review. Continue advanced tool testing and system validation at Dugway Proving Grounds, Utah to validate TTPs. PM will submit final test report, close-out report; and provide technical data to USSOCOM Acquisition Authority for Milestone C Decision.</p>		1.152	0.428	-
<p>Title: Tactical Wideband High-Frequency (WBHF) Radio Assessment (United States Special Operations Command)</p> <p>Description: This project evaluates a tactical WBHF radio operational prototype that may provide up to 240 kilo-bytes per second data rates by using modern internet protocol networking. Video and other data intensive services can be supported without satellites through the use of automatic spectral sensing that ensures that the established link not only has the best signal, but also the maximum available bandwidth without any operator intervention. This radio will provide space resilience and can reduce reliance on satellite communications capability.</p> <p>FY 2015 Accomplishments:</p>		1.030	0.275	-

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p>Initiated procurement of test articles and vendor support services for Phase I performance assessment. Conducted interoperability and compatibility early user assessments in Ottawa, Canada. Report of Findings delivered to Program Management Office (PMO) and reviewed and completed Phase I.</p> <p>FY 2016 Plans: Conduct Phase II performance assessment to include finalizing minor modifications and integration of ruggedized subsystems. Conduct bench level interoperability and compatibility testing of prototype and existing U.S. WBHF radios. Submit Final Technical Test Reports to PMO. Conduct Phase III performance testing by performing over-the-air operational testing of Operational Prototype (OP) and U.S. WBHF radios. Provide Milestone B Decision for PMO and complete the FCT close out process/report.</p>				
<p>Title: Low Cost Innovative Projects (Projects Less Than One Million Dollars Each):</p> <p>Description: OSD CTO selected multiple low cost projects in the areas of Force Protection, Force Support, Anti-Access/Area Denial, Robotics and Autonomous Systems, Interoperability and Countering Unmanned Systems. These projects were selected to deliver proof of principle prototypes for evaluation, assessment and Service adoption within 24 to 36 months.</p> <p>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> - Energy Absorbing Material for Improved Blunt Impact/Trauma Protection: procured helmet suspension test articles and conducted human factors testing for a soft flexible material that stiffens upon impact for use in helmets and body armor to reduce blunt impact forces. - Improved Steels: completed test plan and initiated procurement of test articles of a new class of high nitrogen steels that may improve vehicle protection and durability. - Solar Power Shelter System: procured test articles for this alternative energy source and conducted onsite training at Army Test Center with vendor; prepared the Safety Assessment Report for supporting Army base camps. - Rapid Airfield Damage Assessment Systems: conducted operational testing on a system that detects airfield damage or objects on runways/taxiways that will damage aircraft during takeoff or landing. - Pilot Physiological Monitoring: procured and began testing a flight helmet with integrated sensors that monitor heart rate, blood oxygen saturation, eye metrics, and electrical activity in the brain and warns pilot of out-of-bounds physiological conditions that could compromise performance and adversely affect the mission. - Multifunctional Information Distribution System Joint Tactical Radio System Radio (MIDS-JTRS) Frequency Amplifier (RFA): finalized Government First Article Qualification Testing procedures; completed environmental testing; and performed testing of the Communication RFA Shop Replaceable Unit. - Seismic Detection System Video Augmentation: completed follow-on testing of a video streaming system that compresses full motion video for transfer over bandwidth constrained wireless communications. Streaming video is triggered by a seismic sensor providing visual verification of suspicious activity such as Improvised Explosive Device (IED) emplacement. 		9.267	7.605	-

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - Computer Network Defense (CND) Advanced Persistent Threat (APT) Detection: conducted initial testing and finalize comprehensive test plan for evaluation of software that will address advanced persistent threats (APTs). - H-1 Crash-resistant, Ballistic-tolerant, Fuel Cell Qualification: test article procured; received Phase I test articles. - Horizon Reference System Electroluminescent Panel Replacement: performed testing and provided evaluation reports for a systematic upgrade to modernize the existing electroluminescent (EL) Panel Bar to Light Emitting Diode (LED) Technology on the shipboard Horizon Reference Set. - Thermal Insulation Coating: contracted for ceramic based paint samples that provide thermal protection and insulation on USMC composite shelters. - Polar Icebreaker Study: continued conducting a study of icebreaker hull-form and propulsion technology that will inform future Navy and Coast Guard ship hull design requirements. - Small Unmanned Aerial Vehicle (UAV) Payload with Laser Designator: began evaluation of an Electro-optical/Infrared/Laser Designator payload for Navy's RQ-21A tactical UAV. - Electronic Underwater Navigation System: received test articles, conducted safety and technical testing for a hand-held, precise, navigation device that guides submerged combat divers to their intended target. - "Out-of-Band" Multi-Mission Night Vision Goggles: completed qualification testing of tubes which will be retrofitted into night-vision goggles which will provide greater situational awareness, improved fire control, and better capability against camouflaged targets. <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> - Solar Power Shelter System: conduct engineering analysis/study, conduct technical testing, perform operator/user assessment test, write test reports, prepare decision packet and close out report. - Improved Steels: conduct engineering analysis/study of materials (failure mode, durability and toughness), conduct technical testing (ballistic, weld testing and corrosion resistance), write test reports, revise military specification for protection plates and close out report. - Pilot Physiological Monitoring and Warning System: Conduct Phase II helmet stability and sensor suite signal stability testing, evaluate blood flow sensors, and evaluate arterial and cerebral blood oxygen saturation sensor accuracy during hypoxia exposure to simulated altitude of 25,000 feet in an altitude chamber. Compare data to F-22 validated arterial and cerebral oxygen measurement systems data. Conduct Phase III testing in the centrifuge test facility (San Antonio, TX), conduct altitude chamber testing in the man-rated research altitude chamber test facility (San Antonio, TX) to examine functionality in a reduced barometric pressure environment; and provide all data to USAF for decision if system should continue into flight testing. - MIDS-JTRS Radio Frequency Amplifier: complete testing and analysis; complete decision packet; write final test and close-out reports. - Computer Network Defense Advanced Persistent Threat Detection: finish test and evaluation; complete operator/user test reports; complete decision packet and close-out report. 			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> - H-1 Crash-Resistant Ballistic Tolerant Fuel Cell Qualification: Phase I testing; receive Phase II test articles and begin testing and qualification of fuel cell. - Small Unmanned Aerial Vehicle (UAV) Payload with Laser Designator: conduct integrated flight test on Unmanned Air System at the WOLF Laser Test Range, Webster Field, Maryland mid-FY 2016; follow up with laser designation demonstration in support of USMC AH-1Z attack helicopter late FY 2016 with procurement decision by end of fiscal year. - Thermal Insulation Coating: complete technical testing of coating; and complete test and close-out reports. 			
<p>Title: Asymmetric Force Application and Autonomous Systems Focus Areas</p> <p>Description: FCT will invest in cross-domain, innovative, non-traditional technologies for new and emerging capabilities from international partners to enable cost-leveraging, increase competition, and provide more efficient solutions for our forces during maneuver and engagement operations. Solutions will reduce U.S. reliance on overleveraged blue capabilities and creatively exploit increasingly capable adversary systems while adjusting the cost curve in our favor. Applications of particular interest are those able to provide an innovative technology offset and/or cost calculus advantage. Our allies have made particular progress in the development of systems that offer a significant cost advantage in procurement or operation and reduce the amount of manpower necessary to effectively conduct operations. In addition, FCT will continue to seek out increased interoperability across platforms and systems. These technologies will be likely candidates for evaluation under the FCT program.</p> <p>FY 2016 Plans: During FY 2016, FCT will focus on selecting projects supporting the below Asymmetric Force Application and Autonomous System Areas:</p> <ul style="list-style-type: none"> - Technologies to counter threats associated with integrated air defense systems - Technologies that enhance the ability to conduct long range penetrating strike - Offensive and defensive air superiority operations - Mobile unmanned systems that must maneuver in an environment with little or no human assistance - Systems that aid human cognitive tasks <p>FY 2017 Plans: During FY 2017, FCT will focus on selecting projects supporting the below Asymmetric Force Application and Autonomous System Areas:</p> <ul style="list-style-type: none"> - Technologies to counter threats associated with integrated air defense systems - Technologies that enhance the ability to conduct long range penetrating strike - Offensive and defensive air superiority operations - Mobile unmanned systems that must maneuver in an environment with little or no human assistance 	-	5.650	6.451

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
- Systems that aid human cognitive tasks			
<p>Title: Space Resilience and Spectrum Agility Focus Areas</p> <p>Description: FCT will invest in cross-domain, innovative Space Resilience and Electromagnetic Spectrum Agility evaluations of new and emerging capabilities with international partners. Solutions will increase U.S. options in responding to sophisticated attempts to deny U.S. access to space-based capabilities and allow the Department of Defense to operate with freedom of maneuver in the electromagnetic spectrum.</p> <p>FY 2016 Plans: During FY 2016, FCT will focus on selecting projects supporting the below Space Resilience and Electromagnetic Spectrum Agility Areas:</p> <ul style="list-style-type: none"> - Taking proactive and reactive defensive measures (Avoidance), designing systems with enhanced survivability features (Robustness), conducting operations to replenish lost or diminished capacity (Reconstitution) and help re-establish space capability and capacity (Recovery) - Enhancing subsystems and exploring activities that support any systems architecture able to achieve effects normally associated with current space systems - Gaining and attaining access to spectrum for friendly forces, denying and/or degrading spectrum to our adversaries - Conducting Electromagnetic (EM) deception operations to degrade an adversary's understanding of our intent and capability - Preventing the adversary from leveraging the EM domain to conduct operations in other domains (i.e., air, space, maritime, land and cyber) - Achieving new effects in the Electromagnetic Spectrum (EMS) domain to include directed energy and radio frequency disruption - Evaluating low-cost, efficient or innovative international capabilities <p>FY 2017 Plans: During FY 2017, FCT will focus on selecting projects supporting the below Space Resilience and Electromagnetic Spectrum Agility Areas:</p> <ul style="list-style-type: none"> - Taking proactive and reactive defensive measures (Avoidance), designing systems with enhanced survivability features (Robustness), conducting operations to replenish lost or diminished capacity (Reconstitution) and help re-establish space capability and capacity (Recovery) - Enhancing subsystems and exploring activities that support any systems architecture able to achieve effects normally associated with current space systems - Gaining and attaining access to spectrum for friendly forces, denying and/or degrading spectrum to our adversaries - Conducting Electromagnetic (EM) deception operations to degrade an adversary's understanding of our intent and capability - Preventing the adversary from leveraging the EM domain to conduct operations in other domains (i.e., air, space, maritime, land and cyber) 	-	3.200	6.701

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Office of the Secretary Of Defense		Date: February 2016		
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603133D8Z / <i>Foreign Comparative Testing</i>	Project (Number/Name) P313 / <i>Foreign Comparative Testing</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p>- Achieving new effects in the Electromagnetic Spectrum (EMS) domain to include directed energy and radio frequency disruption</p> <p>- Evaluating low-cost, efficient or innovative international capabilities in the EMS domain for deception operations to degrade an adversary's understanding of our intent and capability</p> <p>Title: Force Logistics Focus Areas</p> <p>Description: FCT will invest in cross-domain, innovative Force Logistic technologies for new and emerging capabilities with international partners, including but not limited to these Defense-wide requirements that are consistent with strategic priorities: Reducing Soldier Load, Interoperability across Platforms and Systems, and Energy Solutions.</p> <p>FY 2016 Plans: During FY 2016, FCT will focus on selecting projects supporting the below Force Logistics Areas:</p> <ul style="list-style-type: none"> - Reducing soldier load reduces the weight currently sustained by the individual dismounted soldier, including materials that enable weight reduction to individual weapons, ammunition, or portable missile systems - Increasing interoperability across Platforms and Systems will invest into technologies for mission-based on-demand routing, network, and information management, with a focus on command and control interoperability with coalition capabilities through integrated multi-level security enabled networks. Transition of Modular Open Systems Approach (MOSA) capabilities which are portable, modular, partitioned, scalable, extendable, and secure - Improving energy solutions will include power systems and electronics designed for extreme cold to support arctic strategy and renewable energy options that can reduce force support and logistics requirements <p>FY 2017 Plans: During FY 2017, FCT will focus on selecting projects supporting the below Force Logistics Areas:</p> <ul style="list-style-type: none"> - Reducing soldier load reduces the weight currently sustained by the individual dismounted soldier, including materials that enable weight reduction to individual weapons, ammunition, or portable missile systems - Increasing interoperability across Platforms and Systems will invest into technologies for mission-based on-demand routing, network, and information management, with a focus on command and control interoperability with coalition capabilities through integrated multi-level security enabled networks. Transition of MOSA capabilities which are portable, modular, partitioned, scalable, extendable, and secure - Improving energy solutions will include power systems and electronics designed for extreme cold to support arctic strategy and renewable energy options that can reduce force support and logistics requirements 		-	3.150	5.451
Accomplishments/Planned Programs Subtotals		21.128	24.782	19.343
C. Other Program Funding Summary (\$ in Millions)				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603133D8Z / <i>Foreign Comparative Testing</i>	Project (Number/Name) P313 / <i>Foreign Comparative Testing</i>

C. Other Program Funding Summary (\$ in Millions)

Remarks

D. Acquisition Strategy

Successful FCT's can transition to acquisition via several ways: as a pre-EMD prototype the item tested could be a technology upgrade insertion into a current platform or program providing greater capability or prolonging the life of the weapon system. If the item was a proof-of-principle prototype the testing results could lead to informed/refined requirements generation providing better outcome for current planned U.S. system or could lead to a direct transition/procurement should the item/article provide a new capability.

E. Performance Metrics

Strategic Goals Supported:

- Develop and Demonstrate Proof-of-Principle prototypes that fill capability gaps.
- Develop and Demonstrate Pre-EMD prototypes that address DoD strategic priorities.
- Develop and Demonstrate a prototype that informs/refines the acquisition process.

Measurable Outcomes:

- FCTs will demonstrate capability objectives within 24-36 months.
- In FY 2015, FCT had a transition rate of 73 percent for completed projects, exceeding the objective of 40 percent for demonstration programs. With a shift from Program Element 0605130D8Z to Program Element 0603133D8Z and focus on countering emerging threats as opposed to current threats, the transition rate is expected to decrease but the program will have more significant impact.