Department of Defense
Fiscal Year (FY) 2017 President's Budget Submission

February 2016

Operational Test and Evaluation, Defense

Defense-Wide Justification Book Volume 5 of 5

Operational Test and Evaluation, Defense

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Table of Volumes

Volume 5 Table of Contents

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Defense-Wide
FY 2017 President's Budget
Exhibit R-1 FY 2017 President's Budget
Total Obligational Authority
(Dollars in Thousands)

12 Jan 2016

Appropriation: 0460D Operational Test & Eval, Defense

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
1	0605118OTE	Operational Test and Evaluation	06	93,223	76,838		76,838	78,047		78,047	U
2	0605131OTE	Live Fire Test and Evaluation	06	45,142	46,882		46,882	48,316		48,316	U
3	0605814OTE	Operational Test Activities and Analyses	06	70,346	63,763		63,763	52,631		52,631	U
		Management Support		208,711	187,483		187,483	178,994		178,994	
Total Operational Test & Eval, Defense				208,711	187,483		187,483	178,994		178,994	

R-1C1: FY 2017 President's Budget (Published Version of PB Position), as of January 12, 2016 at 08:24:18

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Program Element Table of Contents (by Budget Activity then Line Item Number)

Appropriation 0460: Operational Test and Evaluation, Defense

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Program Element Table of Contents (Alphabetically by Program Element Title)

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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Operational Test and Evaluation, Defense	Date: February 2016
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*

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	75.720	93.223	76.838	78.047	-	78.047	80.129	81.488	82.955	84.116	Continuing	Continuing
0605118OTE: *OT&E*	75.720	93.223	76.838	78.047	-	78.047	80.129	81.488	82.955	84.116	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Director of Operational Test and Evaluation (DOT&E) was created by Congress in 1983. The Director is responsible under Title 10 for policy and procedures for all aspects of Operational Test and Evaluation (OT&E) within the Department of Defense (DoD). Particular focus is given to OT&E that supports major weapon system production decisions for acquisition programs included on the Office of Secretary of Defense Test and Evaluation Oversight List that is prepared and approved annually. Generally, there are about 300 programs on the oversight list including all Major Defense Acquisition Programs (MDAP) and Major Automated Information Systems (MAIS). MDAPs may not proceed beyond low-rate initial production (BLRIP) until OT&E of the program is complete. DOT&E is involved early in the planning phase of each program to ensure adequate testing is planned and executed. Key elements of DOT&E's oversight authority include:

- Approve component Test and Evaluation Master Plans (TEMPS).
- Approve component OT&E Test Plans (TPs).
- Oversee Military Department preparation and conduct of field operational tests; analysis and evaluation of the resultant test data; the assessment of the adequacy of the executed test and evaluation programs; and assessment of the operational effectiveness and suitability of the weapon systems.
- Report results of OT&E that supports BLRIP decisions to the Secretary of Defense and Congress, as well as providing an annual report summarizing all OT&E activities and the adequacy of test resources within DoD during the previous fiscal year.
- Review and make recommendations to the Secretary of Defense on all budgetary and financial matters related to OT&E, including operational test facilities, resources and ranges.

DOT&E also oversees and resources OT&E community efforts to plan and execute joint operational evaluations of information assurance and interoperability (IA and IOP) of fielded systems and networks during major Combatant Command (CCMD) and Service exercises, and reports the trends and findings in the annual report.

DOT&E is also involved in increasing the capacity to access realistically advanced cyber warfare capabilities to keep pace with heightened demand for their capabilities, advancing technologies and the growing cyber threat.

This Program Element includes funds to obtain Federally Funded Research and Development Center (FFRDC) support in performing the described tasks, travel funds to carry out oversight of the OT&E and IA and IOP programs, funds for Service teams performing information assurance and interoperability assessments during exercises, administrative support services, DFAS support, and engineering and technical support services related to the conduct of operational test and evaluation and exercise assessments.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Operational Test and Evaluation, Defense	Date: February 2016
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	93.223	76.838	78.434	-	78.434
Current President's Budget	93.223	76.838	78.047	-	78.047
Total Adjustments	0.000	0.000	-0.387	-	-0.387
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Inflation/Economic adjustment	-	-	-0.387	-	-0.387

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2015	FY 2016
Project: 0605118OTE: *OT&E*		
Congressional Add: *Cyber Force Training and Resiliency*	10.000	-
Congressional Add: *PACOM Cyber*	4.880	-
Congressional Add: *Cyber Red Team and Training*	3.760	-
Congressional Add Subtotals for Project: 0605118OTE	18.640	-
Congressional Add Totals for all Projects	18.640	-

Change Summary Explanation

Inflation/Economic adjustment of -$0.387 in FY 2017

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense			Date: February 2016
Appropriation/Budget Activity 0460 / 6	R-1 Program Element (Number/Name) PE 0605118OTE / *Operational Test and Evaluation (OT&E)*	Project (Number/Name) 0605118OTE / *OT&E*	

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
0605118OTE: *OT&E*	75.720	93.223	76.838	78.047	-	78.047	80.129	81.488	82.955	84.116	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Director of Operational Test and Evaluation (DOT&E) was created by Congress in 1983. The Director is responsible under Title 10 for policy and procedures for all aspects of Operational Test and Evaluation (OT&E) within the Department of Defense (DoD). Particular focus is given to OT&E that supports major weapon system production decisions for acquisition programs included on the Office of Secretary of Defense Test and Evaluation Oversight List that is prepared and approved annually. Generally, there are about 300 programs on the oversight list including all Major Defense Acquisition Programs (MDAP) and Major Automated Information Systems (MAIS). MDAPs may not proceed beyond low-rate initial production (BLRIP) until OT&E of the program is complete. DOT&E is involved early in the planning phase of each program to ensure adequate testing is planned and executed. Key elements of DOT&E's oversight authority include:

- The approval of component Test and Evaluation Master Plans (TEMPS).
- The approval of component OT&E Test Plans (TPs).
- Oversight of Military Department preparation and conduct of field operational tests; analysis and evaluation of the resultant test data; the assessment of the adequacy of the executed test and evaluation programs; and assessment of the operational effectiveness and suitability of the weapon systems.
- Reporting results of OT&E that support BLRIP decisions to the Secretary of Defense and Congress, as well as providing an annual report summarizing all OT&E activities and the adequacy of test resources within DoD during the previous fiscal year.
- The review and make recommendations to the Secretary of Defense on all budgetary and financial matters related to OT&E, including operational test facilities, resources and ranges.

DOT&E also oversees and resources OT&E community efforts to plan and execute joint operational evaluations of information assurance and interoperability (IA and IOP) of fielded systems and networks during major Combatant Command (CCMD) and Service exercises, and reports the trends and findings in the annual report.

DOT&E is also involved in increasing the capacity to access realistically advanced cyber warfighting capabilities to keep pace with heightened demand for those capabilities, advancing technologies and the growing cyber threat.

This Program Element includes funds to obtain Federally Funded Research and Development Center (FFRDC) support in performing the described tasks, travel funds to carry out oversight of the OT&E and IA and IOP programs, funds for Service teams performing information assurance and interoperability assessments during exercises, administrative support services, DFAS support, and engineering and technical support services related to the conduct of operational test and evaluation and exercise assessments.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*	**Project (Number/Name)** 0605118OTE / *OT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Operational Test and Evaluation	74.583	76.838	78.047
FY 2015 Accomplishments: Operational Test and Evaluation Oversight This effort is in direct support of the Director's Title 10 responsibilities and is a continuing effort. Funding for FY 2015 provides Operational Test and Evaluation inputs for Test and Evaluation Master Plans, Test Plans, System Acquisition Reports, Defense Acquisition Executive Summary Reports for those programs designated for oversight by DOT&E and OUSD(AT&L). Key elements of DOT&E oversight authority are identified in Calendar Year 2015 Office of the Secretary of Defense Test and Evaluation Oversight List. Cybersecurity and Interoperability Evaluations DOT&E oversaw and resourced nine Combatant Command (CCMD) level and three Service level cybersecurity exercise assessments in FY 2015. In addition to the 12 exercise assessments, two assessments were performed during visits to operational sites not involved in an exercise. All DOT&E-sponsored assessments included a "fix" phase during which DOT&E-sponsored personnel helped CCMD and Service personnel address critical cybersecurity vulnerabilities. DOT&E also began a new Theater Cyber Readiness Campaign (TCRC) with U.S. Pacific Command involving more frequent and more focused assessment events which helped the command address persistent cybersecurity vulnerabilities. The cyber Red Teams which supported the FY 2015 assessments used validated cyber Tactics, Techniques, and Procedures (TTP's) and incorporated more advanced cyber threats. DOT&E initiated a Persistent Cyber OPFOR (PCO) and demonstrated this new capability for more representative and longer-duration adversary portrayal during U.S. Pacific Command's TCRC assessments. Fiscal year 2015 evaluations included trend analyses across prior year results, both within and across CCMDs. Critical findings were transmitted to Service and DoD leadership for their awareness and remediation actions.			
FY 2016 Plans: Operational Test and Evaluation Oversight This effort is in direct support of the Director's Title 10 responsibilities and is a continuing effort. Funding for FY 2016 provides Operational Test and Evaluation inputs for Test and Evaluation Master Plans, Test Plans, System Acquisition Reports, Defense Acquisition Executive Summary Reports for those programs designated for oversight by DOT&E and OUSD(AT&L). Key elements of DOT&E oversight authority are identified in Calendar Year 2016 Office of the Secretary of Defense Test and Evaluation Oversight List. Cybersecurity and Interoperability Evaluations			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*	**Project (Number/Name)** 0605118OTE / *OT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
DOT&E plans to shift resources toward TCRCs, which are designed to help CCMDs address critical cybersecurity vulnerabilities. Three CCMDs will each conduct a TCRC consisting of bi-monthly assessments with supporting PCO focused on improved cybersecurity technologies and/or TTPs to address problems identified in prior assessments; the campaigns will each culminate in a major exercise that examines a critical mission aided by the improved technologies and TTPs. DOT&E will oversee and resource approximately 10 CCMD level and Service level cybersecurity assessments in FY 2016, each including a "fix" phase as described above. The portrayal of advanced cyber threats and assessment of mission accomplishment in representative threat environments are primary planning objectives for assessments in FY 2016. Cyber Protection Teams will be assessed as they are encountered during PCO or exercise events. Fiscal year 2016 evaluations will include trend analyses across prior year results, both within and across CCMDs. Critical findings will be transmitted to Service and DoD leadership for their awareness and remediation actions. The DoD Enterprise Cyber Range Environment (DECRE) will support events for added threat realism during exercise assessments. ***FY 2017 Plans:*** Cybersecurity and Interoperability Evaluations DOT&E plans to continue to shift resources toward TCRCs, which are designed to help CCMDs address critical cybersecurity vulnerabilities. Five CCMDs will each conduct a Theater Cyber Readiness Campaign consisting of bi-monthly assessments focused on improved cybersecurity technologies or TTPs to address problems identified in prior assessments; the campaign will culminate in a major exercise that examines a critical mission aided by the improved technologies and TTPs. DOT&E will oversee and resource approximately 8 CCMD-level and Service-level assessments in FY 2017, each including a "fix" phase. DOT&E will continue to work with the CCMDs and cyber red teams to increase the portrayal of advanced cyber threats which are more representative of nation state threats. The goal is to have the majority of assessments in FY2017 include advanced threats that stress critical missions. Cyber Protection Teams will also be assessed as they are encountered during PCO or exercise events. Fiscal year 2017 evaluations will include trend analyses across prior year results, both within and across CCMDs. Critical findings will be transmitted to Service and DoD leadership for their awareness and remediation actions. The DoD Enterprise Cyber Range Environment (DECRE) and other cyber range assets with Red Teams portraying advanced cyber adversaries will support events for added threat realism.			
Accomplishments/Planned Programs Subtotals	74.583	76.838	78.047

	FY 2015	FY 2016
Congressional Add: Cyber Force Training and Resiliency	10.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605118OTE / *Operational Test and Evaluation (OT&E)*	**Project (Number/Name)** 0605118OTE / *OT&E*

	FY 2015	FY 2016
FY 2015 Accomplishments: Funding was applied at selected locations of the Cyber Mission Force, improving the capabilities and realism of Cyber Red Teams, and assessing Cyber Protection Teams and other network defenders on both ranges and operational networks. These resources were applied in coordination with US Cyber Command in order to maximize the training benefit to the Cyber Mission Force and to perform assessments of the resiliency of CCMD critical missions and the supporting cyber teams.		
Congressional Add: PACOM Cyber ***FY 2015 Accomplishments:*** Funding was applied to growing cyber-range capabilities at US Pacific Command.	4.880	-
Congressional Add: Cyber Red Team and Training ***FY 2015 Accomplishments:*** Funding to support Cyber Red Team and training exercises.	3.760	-
Congressional Adds Subtotals	18.640	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance Measure: Percentage of required operational test planning documents, assessments, and reports applicable to acquisition programs on the OSD Test and Evaluation Oversight List and other special interest programs/legacy systems that are completed and delivered to the appropriate decision makers on time.
The on-time completion rate was computed on the basis of the number of required products that were submitted within established time standards relative to the total number of such products that fell due during the fiscal year. Products included in the measure include beyond low-rate initial production reports, Test Plans, and Test and Evaluation Master Plans for operational test and evaluation oversight as well as assessment plans, “quick look” reports, and final reports for the information assurance and interoperability testing associated with scheduled test events.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Operational Test and Evaluation, Defense	Date: February 2016
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*

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	48.423	45.142	46.882	48.316	-	48.316	48.966	49.947	50.946	51.961	Continuing	Continuing
0605131OTE: *LFT&E*	48.423	45.142	46.882	48.316	-	48.316	48.966	49.947	50.946	51.961	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element consists of three programs: Live Fire Test and Evaluation, Joint Aircraft Survivability Program (JASP), and Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME).

This Program Element directly supports the Congressional statutory requirements for oversight of Live Fire Test and Evaluation (LFT&E). The primary objective of LFT&E is to assure that the vulnerability and survivability of Department of Defense (DoD) crew-carrying platforms and the lethality of our conventional munitions are known and acceptable before entering full-rate production. LFT&E encompasses realistic tests involving actual United States (U.S.) and foreign threat hardware or, if not available, acceptable surrogate threat hardware. The objective is to identify and correct design deficiencies early in the development process. A completed LFT&E program and test report is required before programs proceed beyond low-rate initial production (BLRIP). LFT&E also includes realistic modeling and simulation (M&S) to examine survivability and lethality attributes not assessed during testing.

This Program Element also supports DoD's Joint Live Fire (JLF) Program and other LFT&E related initiatives. JLF was begun in 1984 under an Office of the Secretary of Defense charter to test fielded front-line combat aircraft and armor systems for their vulnerabilities as well as fielded weapons, both U.S. and foreign, for their lethality against their respective targets. Funds are also used to support other initiatives related to quick reaction requests from theater and other areas of personnel survivability.

The Joint Aircraft Survivability Program is the DoD's focal point for joint service enhancement of military aircraft non-nuclear survivability. The JASP is chartered by the commanders of the USN Naval Air Systems Command, USA Aviation and Missile Command and USAF Life Cycle Management Center to coordinate and conduct RDT&E to improve military aircraft survivability, develop and standardize aircraft survivability modeling and simulation (M&S), facilitate information exchange on aircraft survivability and support aircraft survivability education for the DoD and U.S. aircraft community. Each chartering command provides a senior aircraft survivability expert for the JASP Principal Members Steering Group (PMSG), which guides the program and approves projects for funding. The JASP assesses and reports on combat damage incidents through the Joint Combat Assessment Team (JCAT), is the Executive Agent for the Joint Live Fire Aircraft Systems Program managed by the Live Fire Test office of DOT&E.

The Joint Logistics Commanders Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME) was chartered more than 40 years ago to serve as DoD's focal point for munitions effectiveness information. This has taken the form of widely used Joint Munitions Effectiveness Manuals (JMEMs) which address all major non-nuclear U.S. weapons. JTCG/ME authenticates weapons effectiveness data for use in training, systems acquisition, weapon procurement, and combat modeling and simulation. JMEMs are used by the Armed Forces of the U.S., NATO, and other allies to plan operational missions, support training and tactics development, and support force-level analyses. JTCG/ME also develops and standardizes methodologies for evaluation of munitions effectiveness and maintains databases for target vulnerability, munitions lethality, and weapon system accuracy. The JMEM requirements and development processes continues to be driven by operational lessons

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Operational Test and Evaluation, Defense	Date: February 2016
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605131OTE *I Live Fire Test and Evaluation (LFT&E)*

learned (Enduring Freedom, Iraqi Freedom, Odyssey Dawn and Inherent Resolve) and the needs of Combatant Commands, Services, Military Targeting Committee, and Operational Users Working Groups input for specific weapon-target pairings and methodologies.

This program element also includes funds to obtain Federally Funded Research and Development Center (FFRDC) expertise in performing analyses in support of described Live Fire Test and Evaluation tasks, as well as travel funds to carry out the LFT&E, JASP and JTCG/ME programs.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	45.142	46.882	49.043	-	49.043
Current President's Budget	45.142	46.882	48.316	-	48.316
Total Adjustments	0.000	0.000	-0.727	-	-0.727
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Inflation/Economic Adjustment	-	-	-0.727	-	-0.727

Change Summary Explanation

Inflation/Economic Adjustment of -$0.727 in FY 2017

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense			Date: February 2016
Appropriation/Budget Activity 0460 / 6	R-1 Program Element (Number/Name) PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	Project (Number/Name) 0605131OTE / *LFT&E*	

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
0605131OTE: *LFT&E*	48.423	45.142	46.882	48.316	-	48.316	48.966	49.947	50.946	51.961	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Program Element consists of three programs: Live Fire Test and Evaluation, Joint Aircraft Survivability Program (JASP) and Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME).

This Program Element directly supports the Congressional statutory requirements for oversight of Live Fire Test and Evaluation (LFT&E). The primary objective of LFT&E is to assure that the vulnerability and survivability of Department of Defense (DoD) crew-carrying platforms and the lethality of our conventional munitions are known and acceptable before entering full-rate production. LFT&E encompasses realistic tests involving actual United States (U.S.) and foreign threat hardware or, if not available, acceptable surrogate threat hardware. The objective is to identify and correct design deficiencies early in the development process. A completed LFT&E program and test report is required before programs proceed beyond low-rate initial production (BLRIP). LFT&E also includes realistic modeling and simulation (M&S) to examine survivability and lethality attributes not assessed during testing.

This Program Element also supports DoD's Joint Live Fire (JLF) Program and other LFT&E related initiatives. JLF was begun in 1984 under an Office of the Secretary of Defense (OSD) charter to test fielded front-line combat aircraft and armor systems for their vulnerabilities as well as fielded weapons, both U.S. and foreign, for their lethality against their respective targets. Funds are also used to support other initiatives related to quick reaction requests from theater and other areas of personnel survivability.

The Joint Aircraft Survivability Program is the DoD's focal point for joint service enhancement of military aircraft non-nuclear survivability. The JASP is chartered by the commanders of the USN Naval Air Systems Command, USA Aviation and Missile Command and USAF Life Cycle Management Center to coordinate and conduct RDT&E to improve military aircraft survivability, develop and standardize aircraft survivability modeling and simulation (M&S), facilitate information exchange on aircraft survivability and support aircraft survivability education for the DoD and U.S. aircraft community. Each chartering command provides a senior aircraft survivability expert for the JASP Principal Members Steering Group (PMSG), which guides the program and approves projects for funding. The JASP assesses and reports on combat damage incidents through the Joint Combat Assessment Team (JCAT), is the Executive Agent for the Joint Live Fire Aircraft Systems Program managed by the Live Fire Test office of DOT&E.

The Joint Logistics Commanders' Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME) was chartered more than 40 years ago to serve as DoD's focal point for munitions effectiveness information. This has taken the form of widely used Joint Munitions Effectiveness Manuals (JMEMs) which address all major non-nuclear U.S. weapons. JTCG/ME authenticates weapons effectiveness data for use in training, systems acquisition, weapon procurement, and combat modeling and simulation. JMEMs are used by the Armed Forces of the U.S., NATO, and other allies to plan operational missions, support training and tactics development, and support force-level analyses. JTCG/ME also develops and standardizes methodologies for evaluation of munitions effectiveness and maintains databases for target vulnerability, munitions lethality, and weapon system accuracy. The JMEM requirements and development processes continues to be driven by operational lessons

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 0605131OTE / *LFT&E*

learned (Enduring Freedom, Iraqi Freedom, Odyssey Dawn and Inherent Resolve) and the needs of Combatant Commands (CCMDs), Services, Military Targeting Committee, and Operational Users Working Groups (OUWG) input for specific weapon-target pairings and methodologies.

This program element also includes funds to obtain Federally Funded Research and Development Center (FFRDC) expertise in performing analyses in support of described Live Fire Test and Evaluation tasks, as well as travel funds to carry out the LFT&E, JASP and JTCG/ME programs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Live Fire Test and Evaluation	45.142	46.882	48.316
FY 2015 Accomplishments: Live Fire Test and Evaluation Major Test and Evaluation Programs This is a continuing effort. The FY 2015 budget provides for Live Fire Test and Evaluation input for Test and Evaluation Master Plans, Test Plans, System Acquisition Reports, Defense Acquisition Executive Summary reports, and BLRIP reports for those programs designated for oversight by DOT&E and OUSD(AT&L). The oversight list is maintained continuously and published annually. JLF Programs and LFT&E Initiatives In FY15, JLF funded 26 projects and delivered 24 reports. Focus areas for JLF included projects that either 1) characterized new survivability issues; 2) characterized new lethality issues; 3) improved accuracy and fidelity of weapon data; 4) improved test methods; or 5) improved modeling and simulation methods. JLF Air projects evaluated the effects of internal configuration on helicopter crew compartment fires and conducted egress testing, as well as relevant model validation. Projects also investigated technologies/techniques to reduce generic vulnerabilities to all aircraft from threats such as MANPADS and small arms. Other projects included assessment of yawed penetration, missile debris, high energy lasers, the lethality of advanced projectiles, and performed a comparison of commonly used test threats. New projects investigated cabin mounted auxiliary fuel tank vulnerability, ballistically induced hydrodynamic ram effects, and characterized fragmentation grenades. JLF Land projects continued to investigate the vulnerability of vehicles to underbody blast and the lethality of U.S. weapons against typical in-theater targets. Land projects also focused on collecting data for validating modeling and simulation tools. Others included the assessment of the use and validity of manikins and helmet performance. New projects studied aging effects on fielded armor and irregular fragment penetration. JLF Sea projects continued to investigate ship vulnerabilities in the areas of commercial standards, equipment and component damage. The projects also assessed vulnerabilities of designs and components for new ships, fire damage to ship components, including bulkheads, insulation, and reconfigurable spaces. JLF Sea also investigated asymmetric boat threats, and began work on developing small boat vulnerability			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 0605131OTE / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
models. New projects investigated deep depth underwater explosions, air gun configurations for full ship shock trial alternatives, and explored configurations for augmenting ballistic manikins. Additional Live Fire initiatives included continued efforts in support of Personnel Protection Equipment, including testing for combat helmets and body armor. The initiatives also addressed urgent requests from theater to deploy the Joint Combat Assessment Team to investigate and report to operators, restored the Navy Advanced Mine Simulation System (AMISS), and continued supporting the development of a ground vehicle survivability course. JASP In FY 2015 the JASP continued work on 40 multi-year RDT&E projects and initiated 24 new projects approved by the JASP Principal Members Steering Group and OSD/DOT&E. In the area of susceptibility reduction, the JASP addressed improving the effectiveness and reducing the space, weight and power required for directed energy infrared countermeasures, electronic countermeasures technology and techniques, integrated aircraft survivability equipment, and aircrew situational awareness. In the area of vulnerability reduction, the JASP continued to address requirements for lighter and more effective vulnerability reduction technology (e.g., armor, fuel containment, fire suppression, and aircrew and passenger protection). In aircraft survivability Modeling and Simulation (M&S), the JASP continued to improve survivability M&S credibility, address operator requirements for survivability data, integrate DIA threat missile models into threat engagement codes, improve the assessment of aircrew and passenger injuries, and address M&S requirements identified by the joint aircraft survivability community. The JASP completed 33 reports documenting efforts accomplished in FY 2015. The JCAT continued to support the Air Force, Army, Marine Corps and Navy by assessing combat damage incidents, training operators on threat effects and combat damage assessment, and reporting their findings to combatant commanders and the DoD science and technology and acquisition communities. The JASP continued supporting aircraft survivability education and information exchange through internet sites (restricted access and classified), by publishing the Aircraft Survivability Journal, developing educational materials and conducting training for the DoD and their contractors. Joint Technical Coordinating Group for Munitions Effectiveness JTCG/ME continued to field critical JMEM products to enable on-going CCMD operational Weaponeering and collateral damage estimates along with support to the Anti-air effectiveness community (operational, training, testing, and analysis). In support of operational commanders, DoD targeteers, weaponeers, and planners, the JTCG/ME released the Digital Precision Strike Suite (DPSS) Collateral Damage Estimation (DCiDE) Tool v1.2.2, and is finalizing the formal release of JMEM Weaponeering System (JWS) v2.2, and Joint-Anti-air Combat Effectiveness System (J-ACE) Air Superiority v5.3.			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 0605131OTE / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
JWS v2.3 efforts included development and initial integration of enhanced data sets and capabilities include: new Imagery Interface to implement aimpoint development leveraging the Tasked Target Text Data (T3D) data format implemented by currently fielded mission planning systems. JWS software and T3D imagery interface modifications to support integration of Electronic Light Table (ELT) viewers. Development of Modernized Integrated Database (MIDB) and Joint Targeting Toolbox (JTT) interfaces to support connectivity. These developments will enable the integration of Weaponeering, Precision Point Mensuration (PPM) and Collateral Damage Estimation (CDE) via Digital Imagery Exploitation Engine (DIEE); currently under development. JWS v2.3 will also add the updated Gunship Delivery Accuracy Program (GDAP), Rotary Wing Delivery Accuracy Program (RWDAP), and Fast Integrated Structural Tool (FIST) v1.2. Based on the current guidance and direction from Joint Staff, JWS v2.2 and future versions will be released to several key coalition partners in support of current operations at Combined Air Operations Centers and Other Joint Commands. The JTCG/ME released Digital Precision Strike Suite (DPSS) Collateral Damage Estimation (DCiDE) v1.2.2 with enhancements to support Inherent Resolve Kinetic Strike partners. This tool displays accredited Collateral Damage Estimate Level 1-5 A-C series CER reference tables. In addition, in direct support of the Combatant Commands and the CJCSI 3160.01, JTCG/ME accredited new Collateral Effects Radii (CER) Reference Tables and the corresponding extensible markup language (xml) file for DCiDE. Changes included additions for air burst munitions and nomenclature changes. Additional updates have been provided for newly fielded/ updated systems (e.g., GBU-49/BLU-133; AGM-176A; 155mm M109A M549A1 and M795 with Guided M1156 PGK Fuze). In support of advanced CDE techniques, the Collateral Effects Library (CEL) was developed. J-ACE simulates air-to-air and surface-to-air engagements to support the operational, training, test, and acquisition communities. J-ACE v5.3 includes extended and updated data sets for missile and aircraft target aero-performance, anti-air missile lethality, and air target vulnerability. This includes 17 new or updated BLUE/RED Air-to-Air (AA) or Surface-to-Air (SA) Government furnished missile and weapon fly out models. Additionally, Joint Anti Air Model (JAAM) was updated to include the effect of weapon system reliability on the probability of a successful engagement. J-ACE v5.3 includes the Hybrid Integration and Visualization Engine (HIVE)/Bluemax6 software interface for increased aircraft aero performance modeling with HOTAS (Hands On Throttle and Stick) and display capability. BlueMax6 provides a large library of BLUE and RED aircraft models developed by the acquisition and intelligence communities. J-ACE v5.3 also includes increased Electronic Counter-Measure (ECM) capabilities for an aircraft's ECM system jamming coverage. The new HIVE/ESAMS software interface enables Blue counter measure evaluations against Red Surface to Air Missiles. Initial dynamic visualization of an aircraft's ECM systems zones of coverage will allow pilots, while developing threat engagement or evasive maneuvers, to consider ECM protection with respect to the threat position. The latest updated Endgame Manager (EM) module is also included with new/updated weapons data sets and increased non-spherical blast capability. The product also includes a vast library of separate audit trail reports for each aircraft and weapon.			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 0605131OTE / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
JTCG/ME continued to develop JMEM data for the most critical Combatant Commander identified systems (Targets and Weapons). Accreditation of tri-Service JMEM operational tools continued as well as with expanded databases to incorporate newly fielded weapons (i.e., Air-to-Surface, Surface-to-Surface Direct/Indirect Fire, and Anti-air). JTCG/ME continues to conduct requirement analysis of the current JWS, J-ACE, and DCiDE software suites to enhance long-term software maintainability, connectivity, and flexibility to include structural and architectural changes. ***FY 2016 Plans:*** Live Fire Test and Evaluation Major Test and Evaluation Programs This is a continuing effort. The FY 2016 budget provides Live Fire Test and Evaluation input for Test and Evaluation Master Plans, Test Plans, System Acquisition Reports, Defense Acquisition Executive Summary reports, and BLRIP reports for those programs designated for oversight by DOT&E and OUSD(AT&L). The oversight list is maintained continuously and published annually. JLF Programs The FY 2016 JLF budget will support at least 28 projects. Focus areas for JLF included projects that either 1) characterized new survivability issues; 2) characterized new lethality issues; 3) improved accuracy and fidelity of weapon data; 4) improved test methods; or 5) improved modeling and simulation methods. JLF Air projects will continue to evaluate technologies and techniques to decrease vulnerabilities to all currently tested aircraft, against operationally relevant threats. The projects will focus on completing the assessment of CV-22 armor, ballistic vulnerability testing of fuel system on light aircraft, and percentage testing of oxygen prohibiting fuel tank ullage explosions. New projects will investigate new threat model development, V-22 wing fire protection, crew cabin fire mitigation. JLF Land projects will continue to investigate the vulnerability of vehicles to underbody blast and the lethality of U.S. weapons against typical in-theater targets. JLF Land projects will also provide the necessary data to enable improvement and validation of modeling and simulation tools. New projects will study fielded weapons effects to support warfighter collateral damage estimates and weapon lethality against urban structures. Some will study penetration profiles of ballistic backing materials for body armor testing, evaluate the optimization of 30mm urban combat mixes as well as new arena test data collection methodologies. JLF Sea projects will continue to develop key components of alternatives to traditional shock trials of ships and submarines. They will continue to investigate ship vulnerabilities in the areas of commercial standards, equipment and component damage, and will investigate vulnerabilities of designs and components for new ships.			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 0605131OTE / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Live Fire initiatives include continued efforts in support of Personnel Protection Equipment, including testing for combat helmets and body armor. Initiatives also include Missile Defense modeling updates as well as continued support of the development of a ground vehicle survivability course. JASP In FY 2016 the JASP will continue work on at least 28 multi-year RDT&E projects and initiate 19 new projects approved by the JASP Principal Members Steering Group and OSD/DOT&E. In the area of susceptibility reduction, the JASP will address improving the effectiveness and reducing the space, weight and power required for directed energy infrared countermeasures, electronic countermeasures technology and techniques, and aircrew situational awareness. In the area of vulnerability reduction, the JASP will continue to address requirements for lighter and more effective vulnerability reduction technology (e.g., armor, fuel containment, fire suppression, and aircrew and passenger protection). In aircraft survivability M&S, the JASP will continue to improve survivability M&S credibility, address operator requirements for survivability data, integrate DIA threat missile models into threat engagement codes, improve the assessment of aircrew and passenger injuries, and address M&S requirements identified by the joint aircraft survivability community. The JCAT will continue to support the Air Force, Army, Marine Corps and Navy by assessing combat damage incidents, training operators on threat effects and combat damage assessment, and reporting their findings to combatant commanders and the DoD science and technology and acquisition communities. The JASP will continue supporting aircraft survivability education and information exchange through internet sites (restricted access and classified), by publishing the Aircraft Survivability Journal, developing educational materials and conducting training for the DoD and their contractors. The JASP will initiate, continue and complete other projects as approved by the JASP Principal Members Steering Group and OSD/DOT&E. Joint Technical Coordinating Group for Munitions Effectiveness In support of operational Combatant Commanders, DoD targeteers, weaponeers, and planners, the JTCG/ME will formally release JMEM Weaponeering System (JWS) v2.2 and Joint-Anti-air Combat Effectiveness System (J-ACE) Air Superiority (AS) v5.3 in 1QFY16 and 3QFY16, respectively. JTCG/ME will also finalize and release JWS v2.3 in FY16, while continuing to integrate and develop data, methodology, and major capabilities for future products: JWS v3.0, J-ACE v5.4, Joint Non-Kinetic Effectiveness (J-NKE) tools, Digital Precision Strike Suite (DPSS) Collateral Damage Estimation (DCiDE) tool, and standalone US Only solutions for rapid, high priority requirements. JTCG/ME will also continue to enhance User interface and Training opportunities to optimize support to the Warfighter. Based on the current guidance and direction from Joint Staff, JWS 2.2 and future versions will be released to several key coalition partners in support of current operations at International Security Assistance Force (ISAF), Combined Air Operations Centers,			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 0605131OTE / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
and Other Joint Commands. Given expanded release scope, JTCG/ME will continue to develop, where applicable, weaponeering solutions for high priority requirements (e.g. Probability of Kill (Pk) Look up Table Software, Quick Weaponeering Guides, etc.). JWS v2.3 efforts include final integration, operational testing, and execution of final release procedures of the completed product. The product will include enhanced capabilities: new/updated data sets, new Imagery Interface to implement aimpoint development leveraging the Tasked Target Text Data (T3D) data format implemented by currently fielded mission planning systems. JWS software and T3D imagery interface will support integration of Electronic Light Table (ELT) viewers. There will also be a Modernized Integrated Database (MIDB) and Joint Targeting Toolbox (JTT) interface with additional capabilities to support connectivity. These developments will enable the integration of Weaponeering, Precision Point Mensuration (PPM), and Collateral Damage Estimation (CDE). JWS v2.3 will also include updated Gunship Delivery Accuracy Program (GDAP), Rotary Wing Delivery Accuracy Program (RWDAP), and Fast Integrated Structural Tool (FIST) v1.2. JWS v2.3 is scheduled for 4QFY16 Release. JWS v3.0 efforts will include development and initial delivery/integration of enhanced capabilities to include: Joint Mean Area Effects (JMAE) v2.3, Non-Linear Blast Tool (NBT) v1.0, Moving Target Methodology (MTM), Small Precision Munition (SPM) methodology, bomb burial interim methodology, Average Matrix (AvMat) v2.0, Joint Gun Effectiveness Model (JGEM) v3.1, Fast Integrated Structural Tool (FIST) v2.0, Penetration and Cratering Effects (PCEffects), Bridge Analysis System (BAS), Linear Target Module (LTM), Precision Munitions Planning Tool (PMPT). J-ACE v5.4 efforts will include development, delivery, and initial integration of capabilities in the Joint Anti-air Model (JAAM) and Endgame Manager (EM) v5.4 modules. JAAM v5.4 capabilities include expanded use of Hybrid Integration and Visualization Engine (HIVE) and data/model assemblies for more efficient testing and interface along with enhancements in: weapons/ performance data, graphical user interface (GUI) and displays, lethal radius methodology, aero performance, detection methodology, and training/debrief tool interfaces. EM v5.4 capabilities will include enhancements in: burst point methodology, GUI, batch run/run time, enhanced fuze methodology, new shape charged jet, and near field trajectory. JAAM v5.4 will also include initial capability to evaluate two sided Suppression of Enemy Air Defense (SEAD) and Destruction of Enemy Air Defense (DEAD). DCiDE efforts will include realignment of DCiDE with enhancements to CJCSI 3160.01, develop/update critical requirements for CDE products, support the development of the weapon / warhead data for inclusion in the updated CDE Tables, and review CEL as part of operational tools.			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 0605131OTE / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
J-NKE efforts will include continued validation of Cyber Capabilities Registry (CCR) data and Cyber JMEM (CJMEM) capability database population, develop process to identify Cyber Critical Elements based on existing kinetic process, identify/develop Cyber target vulnerability (TV) database, populate Jammer Effectiveness Tables (JET), improve existing Cyber Weaponeering modeling. JTCG/ME will continue to strengthen User interaction and training on products. The JWS training program will include multiple training sessions and Operational Users Working Group (OUWG) forums with new product release. The J-ACE formal training program will continue the expansion with more mature program and new product release. Additionally, JTCG/ME with continue to train DCiDE users to support Collateral Damage Estimation decisions. JTCG/ME will continue to develop a predictive capability to assess blast effects, body-on-body penetration, and blast-fragment synergism and incorporate these mechanisms in the JTCG/ME estimation process for small precision weapons. Furthermore, JTCG/ME will expand the use of computational physics to improve test design and data analysis to support both analytical model development and the characterization of weapons addressing blast interactions with structures, weapon fragmentation, and penetration mechanics. JTCG/ME will develop JMEM data for most critical Combatant Commander identified systems (Targets and Weapons), and reduce DVD-ROM update cycles through incremental updates and increased efficiencies. Accreditation of tri-Service JMEM operational tools will continue as well as expanding existing databases to incorporate newly fielded weapons (i.e., Air-to-Surface, Surface-to-Surface Direct/Indirect Fire, J-NKE and Anti-air). JTCG/ME will continue to conduct requirement analysis of the current JWS, J-ACE, DCiDE and DIEE software suites to finalize a road map in enhancing long-term software maintainability, connectivity, and flexibility to include structural and architectural changes.			
FY 2017 Plans: JLF Programs and LFT&E Initiatives The FY 2017 budget will support the Live Fire Test and Evaluation deputate's assessment of Test and Evaluation Master Plans, Test Plans, System Acquisition Reports, Defense Acquisition Executive Summary reports, and the development of Live Fire Test and Evaluation reports for those programs designated for OSD oversight . The DOT&E oversight list is maintained continuously and published annually. The FY 2017 budget will support the planning and execution of tests of fielded systems not previously tested under the Live Fire Programs to support DOT&E and operator needs. New threats, missions, TTPs, and combat environments create the need for			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 0605131OTE / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017

these tests and an assessment of performance. JLF projects will be defined, planned and executed to provide survivability and lethality data on currently fielded U.S. systems.

JASP

In FY 2017 the JASP will continue work on at least 30 multi-year RDT&E projects and initiate about 10 new projects approved by the JASP Principal Members Steering Group and OSD/DOT&E. In the area of susceptibility reduction, the JASP will address improving the effectiveness and reducing the space, weight and power required for directed energy infrared countermeasures, electronic countermeasures technology and techniques, aircrew situational awareness and urgent operator needs. In the area of vulnerability reduction, the JASP will continue to address requirements for lighter and more effective vulnerability reduction technology (e.g., armor, fuel containment, fire suppression, and aircrew and passenger protection). In aircraft survivability M&S, the JASP will continue to improve survivability M&S credibility, address operator requirements for survivability data, integrate DIA threat missile models into threat engagement codes, improve the assessment of aircrew and passenger injuries, and address M&S requirements identified by the joint aircraft survivability community.

The JCAT will continue to support the Air Force, Army, Marine Corps and Navy by assessing combat damage incidents, training operators on threat effects and combat damage assessment, and reporting their findings to combatant commanders and the DoD science and technology and acquisition communities. The JASP will continue supporting aircraft survivability education and information exchange through internet sites (restricted access and classified), by publishing the Aircraft Survivability Journal, developing educational materials and conducting training for the DoD and their contractors. The JASP will initiate, continue and complete other projects as approved by the JASP Principal Members Steering Group and OSD/DOT&E.

Joint Technical Coordinating Group for Munitions Effectiveness

In support of operational Combatant Commanders, DoD targeteers, weaponeers, and planners, the JTCG/ME will formally release JMEM Weaponeering System (JWS) v3.0 Beta and Joint-Anti-air Combat Effectiveness System (J-ACE) Air Superiority (AS) v5.4 in 3QFY17. JTCG/ME will also continue to develop data, methodology, and major capabilities for future products based on requirements. Future products include: JWS v3.0, J-ACE v5.5, Joint Non-Kinetic Effectiveness (J-NKE), and Digital Precision Strike Suite (DPSS) Collateral Damage Estimation (DCiDE) tool.

JWS v3.0 efforts will include final integration, operational testing, and execution of final release processes for completed product. The new product capabilities will include: Joint Mean Area Effects (JMAE) v2.3, Non-Linear Blast Tool (NBT) v1.0, Moving Target Methodology (MTM), Small Precision Munition (SPM) methodology, bomb burial interim methodology, Average Matrix (AvMat)

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 0605131OTE / *LFT&E*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
v2.0, Joint Gun Effectiveness Model (JGEM) v3.1, Fast Integrated Structural Tool (FIST) v2.0, Penetration and Cratering Effects (PCEffects), Bridge Analysis System (BAS), Linear Target Module (LTM), Precision Munitions Planning Tool (PMPT). J-ACE v5.4 efforts will include final integration, operational testing, and release of completed product. The new product capabilities will include expanded use of Hybrid Integration and Visualization Engine (HIVE) and data/model assemblies for more efficient testing and interface to Joint Anti-Air Model (JAAM). Enhancements to both JAAM and Endgame Manger will include: weapons/performance data, GUI and displays, lethal radius methodology, aero performance (HOTAS - Hands On Stick and Throttle), detection methodology, and training/debrief tool interfaces, burst point methodology, Graphical User Interface, batch run/run time, enhanced fuze methodology, new shape charged jet, and near field trajectory. J-ACE v5.4 will also include initial capability to evaluate two sided Suppression of Enemy Air Defense (SEAD) and Destruction of Enemy Air Defense (DEAD). J-ACE 5.4 is scheduled for 3QFY17 Release. J-ACE v5.5 efforts will include continued development of enhanced capabilities in the Joint Anti-air Model (JAAM) and Endgame Manager (EM) modules. J-ACE v5.5 capabilities will include expanded evaluation of two sided Suppression of Enemy Air Defense (SEAD) and Destruction of Enemy Air Defense (DEAD) along with enhanced capabilities in the following: weapons/performance data assemblies, initial rotary wing capability, Infra-Red Counter Measures leveraging existing capabilities (e.g., MOSAIC, etc.), Ground-to-Air Guns leveraging existing capabilities (e.g., RADGUNS, etc.), interfaces to external models, EM Hit-to-Kill methodology, and EM Cloud of Points methodology. JTCG/ME will continue to strengthen User interaction and training on products. The JWS training program will include multiple training sessions and Operational Users Working Group (OUWG) forums with new product release. The J-ACE formal training program will continue to expansion with more matured program and new product release. Additionally, JTCG/ME with continue to train DCiDE users to support Collateral Damage Estimation decisions. JTCG/ME will develop JMEM data for most critical Combatant Commander identified systems (Targets and Weapons), and reduce DVD-ROM update cycles through incremental updates and increased efficiencies. Accreditation of tri-Service JMEM operational tools will continue as well as expanding existing databases to incorporate newly fielded weapons (i.e., Air-to-Surface, Surface-to-Surface Direct/Indirect Fire, non-kinetic and Anti-air). JTCG/ME will continue to conduct requirement analysis and development of future architectures for JWS, DCiDE and DIEE software suites to enable the integration of Weaponeering, Precision Point Mensuration (PPM) and Collateral Damage Estimation (CDE).			
Accomplishments/Planned Programs Subtotals	45.142	46.882	48.316

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605131OTE / *Live Fire Test and Evaluation (LFT&E)*	**Project (Number/Name)** 0605131OTE / *LFT&E*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

(U) Performance Measure: Percentage of required live fire test planning documents, assessments, munition effectiveness manuals, and reports applicable to acquisition programs on the OSD Test and Evaluation Oversight List and other special interest programs/legacy systems that are completed and delivered to the appropriate decision makers on time. Percentage of required products, such as test planning documents, munitions effectiveness manuals, tactic-techniques and reports that are developed and delivered to program managers and customers on time.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Operational Test and Evaluation, Defense	Date: February 2016
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*

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	62.157	70.346	63.763	52.631	-	52.631	58.002	59.631	50.042	51.438	Continuing	Continuing
0605814OTE: *OTA&A*	62.157	70.346	63.763	52.631	-	52.631	58.002	59.631	50.042	51.438	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Operational Test Activities and Analyses (OTA&A) programs are continuing efforts that provide management and oversight of test and evaluation functions and expertise to the Department of Defense (DoD). The OTA&A programs consist of three activities: Joint Test and Evaluation (JT&E); Threat Systems (TS); and Center for Countermeasures (CCM).

Joint Test and Evaluation projects are test and evaluation activities conducted in a joint military environment that develop process improvements. These multi-Service projects, chartered by the Office of the Secretary of Defense and coordinated with the Joint Staff, appropriate combatant commanders, and the Services, provide non-materiel solutions that improve: joint interoperability of Service systems, technical and operational concepts, joint operational issues, development and validation of joint test methodologies, and test data for validating models, simulations, and test beds. The JT&E projects address relevant joint war fighting issues in a joint test and evaluation environment by developing and providing new tactics, techniques, and procedures to improve joint capabilities and methodologies.

Threat Systems, based on a memorandum of agreement between the Director, Operational Test and Evaluation (DOT&E) and the Defense Intelligence Agency, provides DOT&E support in the areas of threat resource analysis, intelligence support and threat systems investments. Threat Systems provides threat resource analyses on the availability, capabilities and limitations of threat representations (threat simulators, targets, models, U.S. surrogates and foreign materiel) and analysis of test resources used for operational testing to support DOT&E's assessment of the adequacy of testing for those programs designated for oversight by DOT&E and the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics. Threat Systems provides DOT&E assessment officers and other DOT&E activities with program specific threat intelligence support. Threat Systems also funds management, oversight, and development of common-use threat specifications for threat simulators, threat representative targets, and digital threat models used for test and evaluation.

The Center, a Joint Service Countermeasure (CM) T&E Activity, directs, coordinates, supports, and conducts independent countermeasure/counter-countermeasure (CCM) T&E activities of U.S. and foreign weapon systems, subsystems, sensors, and related components. The Center accomplishes this work in support of DOT&E, Deputy Assistant Secretary of Defense (DASD) for Developmental Test and Evaluation (DT&E), weapon system developers, and the Services. The Center's testing and analyses directly supports operational effectiveness and suitability evaluations of CM/CCM systems, such as missile warning and aircraft survivability equipment (ASE), used on rotary-wing and fixed-wing aircraft. The Center develops unique CM/CCM test equipment to support testing in operationally realistic environments. The Center determines effectiveness of precision guided weapon (PGW) systems and subsystems when operating in an environment degraded by CMs. Analysis and recommendations on CM/CCM effectiveness are provided to Service Program Offices, DOT&E, DASD (DT&E), and the Services. The Center also supports Service member exercises, training, and pre-deployment activities with expertise on CM/CCM technology and capabilities.

This Program Element includes funds to obtain Federally Funded Research and Development support and travel funds.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Operational Test and Evaluation, Defense	Date: February 2016
Appropriation/Budget Activity 0460: *Operational Test and Evaluation, Defense* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	70.346	46.838	47.810	-	47.810
Current President's Budget	70.346	63.763	52.631	-	52.631
Total Adjustments	0.000	16.925	4.821	-	4.821
• Congressional General Reductions	-	-1.075			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	18.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Enhancement for Fifth Generation Aerial Target (5GAT)	-	-	6.600	-	6.600
• Inflation/Economic Adjustment	-	-	-1.779	-	-1.779

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2015	FY 2016
Project: 0605814OTE: *OTA&A*		
Congressional Add: *Joint Test and Evaluation*	18.000	10.000
Congressional Add: *Threat Resource Analysis*	5.000	8.000
Congressional Add Subtotals for Project: 0605814OTE	23.000	18.000
Congressional Add Totals for all Projects	23.000	18.000

Change Summary Explanation

Enhancement for Fifth Generation Aerial Target (5GAT) of $6.6 in FY 2017
Inflation/Economic Adjustment of -$1.779 in FY 2017

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense			Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 0605814OTE / *OTA&A*	

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
0605814OTE: *OTA&A*	62.157	70.346	63.763	52.631	-	52.631	58.002	59.631	50.042	51.438	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Operational Test Activities and Analyses (OTA&A) programs are continuing efforts that provide management and oversight of test and evaluation functions and expertise to the Department of Defense (DoD). The OTA&A programs consist of three activities: Joint Test and Evaluation (JT&E); Threat Systems (TS); and, the Center for Countermeasures (CCM).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Operational Test Activities and Analyses	47.346	45.763	52.631

FY 2015 Accomplishments:

Joint Test and Evaluation (JT&E)

In FY 2015, JT&E closed two projects with six projects ongoing from FY 2014 and 2015. Joint Counter Low, Slow, Small Unmanned Aircraft Systems (UAS), closed in April 2015, developed and tested integrated air and missile defense operator procedures in order to increase an operator's ability to detect, track, and identify low, slow, and small UASs and provide timely notification to the air defense commander. The Unmanned Aircraft Systems Airspace Integration Joint Test, closed in July 2015, developed and tested DoD UAS procedures to support effective UAS flight operations in the National Airspace System.

Three new feasibility studies were conducted in FY 2015, two of which were selected to conduct joint tests.

Threat Systems

Threat Systems continued test planning working group participation and performed technical analyses to identify threat shortfalls; conducted special studies and provided current intelligence support tailored to specific U.S. weapon systems acquisitions; continued managing intelligence "deep dives" to produce intelligence in sufficient detail to develop new threat test assets; operated and maintained the modeling and simulation configuration control board for threat models and simulation used in test facilities; and continued the development and implementation of a tri-Service and Allied threat M&S roadmap to ensure infrared countermeasure systems have sufficient threat test assets. Threat Systems proposed, managed, and oversaw threat test assets funded by the Test Resource Management Center that support DOT&E-identified threat shortfalls, identified candidate threat systems from the various intelligence agencies for possible development of models for use in test and evaluation. Threat Systems also continued efforts to maintain a standard set of threat performance models.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 0605814OTE / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017

These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is realistic and suitable, and promotes common solutions to Service threat representation needs.

The Center

The Center completed 35 T&E activities and analyzed and reported on more than 27 different systems, with special emphasis on aircraft survivability, CM/CCM employment, warning systems, and PGWs. Most programs supported received an independent assessment of our data/findings and test support for their CM/CCM evaluations. Approximately 51% of the Center's efforts were spent on aircraft survivability equipment (ASE) testing; with the majority of these efforts in support of rotary wing aircraft. About 22% of the Center's efforts were spent on PGW, foreign systems, and other types of field testing not related to ASE. Approximately 7% of the Center's efforts were dedicated to training support, with emphasis on CM–based, pre-deployment training for rotary wing units. Seventeen percent of the Center's efforts were spent on internal programs to improve test capabilities and to develop test methodologies for new types of T&E activities. The Center continued to develop multiple test tools for evaluating ASE infrared countermeasure (IRCM) systems and Hostile Fire Indication (HFI) systems. In addition, the Center is improving its electronic warfare capability with the development of the high-power Portable Range Threat Simulator (HPRTS) that will provide a more comprehensive integrated ASE T&E environment. Our support was distributed across all the Services, as well as intelligence agencies and research and development activities. About 3% of the Center's efforts consisted of providing subject matter expertise and other support not directly related to scheduled test activities.

The Center expanded its test capability this year. Two additional remote launchers were brought on board and used in testing. All three remote launchers were upgraded to handle newer missile threats, one of the new launchers is capable of firing larger format missiles. Multi-Spectral Sea and Land Target Simulator (MSALTS) and Joint Mobile Infrared Countermeasures Test System (JMITS) were upgraded to make their signatures more realistic. A Portable Radar Threat System was procured and began undergoing Verification, Validation, and Accreditation (VV&A) assessments. The JSIS van vehicle was completed late in FY 2015.

The Center provided expertise to many organizations and was actively involved in the following panels: Joint Expendable Countermeasures (JECM) Integrated Product Team, Joint Infrared Countermeasures Multi Sensing Symposia Working Group (MSS IRCM WG), Joint Aircraft Survivability Program (JASP), Foreign Material Exploitation Working Group, Foreign Material Program T&E Subcommittee, Joint Countermeasures T&E Working Group (JCMT&E WG), and JCMT&E WG Hostile Fire Indicator (HFI) subgroup lead.

FY 2016 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 0605814OTE / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017

Joint Test and Evaluation (JT&E)

In FY 2016 JT&E has four projects slated to close and an estimated four projects ongoing from FY 2015 and 2016. One of the projects to close will be the Joint Base Architecture for Secure Industrial Control Systems Joint Test that is currently assessing and refining joint industrial control systems network tactics, techniques, and procedures to better identify, mitigate, and recover from advanced, persistent cyber-attacks. Another project anticipated to close is the Joint Tactical Air Picture Joint Test that will develop tactics, techniques, and procedures to provide an improved tactical air picture that decreases the risk of hostile attacks and fratricide as well as increases the effective use of integrated air and missile defense systems.

Four new feasibility studies are expected to be conducted in FY 2016, two of which will be selected to conduct joint tests.

Threat Systems

In FY 2016, Threat Systems will continue test planning working group participation and perform technical analyses to identify threat shortfalls; conduct special studies and provide current intelligence support tailored to specific U.S. weapon systems acquisitions based on the availability of funding. Threat Systems will:
- Provide intelligence support to DOT&E staff to address specific questions on threat systems affecting programs on the OSD T&E Oversight list and provide briefings and special intelligence reports when necessary.
- Support the US warfighter by providing threat intelligence to ensure operational and developmental testing occurs against realistic threat representations.
- Sustain and manage threat M&S to support test and evaluation by overseeing and coordinating intelligence community developed threat models, performing threat model anomaly resolution resolving differences from live fire testing, integrating threat models into T&E facilities and distributing performance and signature models to T&E users.
- Review validation reports to independently ensure that correct threat data and critical parameters are presented in the report to assessment the threat representation's capabilities to replicate a real world threat system.
- Continue Identifying initiatives to improve cyberspace threat representation and prediction, cyber-economic threats to DoD systems, representative threat offensive and defensive cyber operations capabilities, and scalable cyberspace threat test environments that can interface with cyber test networks.
- Manage Integrated Technical Evaluation and Analysis of Multiple Sources (ITEAMS) efforts supporting programs on the OSD T&E Oversight List by conducting intelligence "deep dives" to produce intelligence in sufficient detail to develop new threat test assets.
- Initiate new ITEAMS leading to the development of new threat systems for T&E based on the availability of funding.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 0605814OTE / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
- Represent DOT&E at foreign material exchanges, inter-agency coordinating groups, and non-proliferation groups to raise awareness of T&E needs for foreign material, coordinate service requirements, and de-conflict and prioritize foreign material requirements for T&E. - Represent DOT&E at the Intelligence Mission Data Oversight Board responsible for development, production and sharing issues affecting the intelligence data supporting weapons systems acquisition. - Oversee legacy DOT&E investments and continue management and oversight of legacy and new Test Resource Management Center-funded threat system investments. These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is realistic and suitable, and promotes common solutions to Service threat representation needs. The Center The Center will complete Initial Operating Capability (IOC) development of the Joint Standard Instrumentation Suite (JSIS), which will be used to collect threat signature data for developing/improving threat models. The Center will complete the development of the HPRTS and perform a VV&A assessment of the system. The Center will continue working with the Threat Simulator Working Group (TSWG)-sponsored HSIG model. The Center will begin assessing Integrated ASE test methodologies to prepare for future T&E requirements of Integrated ASE system. The Center will work with Missile and Space Intelligence Center (MSIC) to expand the capabilities of the Remote Launching System (RLS) to handle newer threats needed to meet program T&E requirements. The Center is currently scheduled to test, analyze, and report on more than 30 systems and subsystems, with emphasis on rotary wing survivability, CM/CCM employment, and PGWs. Each program supported will receive an independent assessment of our data/findings and test support for CM/CCM evaluations. The Center will continue to emphasize support of DOT&E priorities, with a clear focus on Title 10 weapons systems, aircraft survivability and hostile fire initiatives. The Center will continue to conduct ongoing investigations towards determining and filling the gaps in EW and multimode system testing. In addition to these test activities, the Center will continue to provide CM expertise in pre-deployment events and training, as well as CM/CCM-focused tactics, techniques and procedures (TTP) development. Our support will be distributed across all the Services, as well as intelligence agencies and research and development activities. The Center will provide expertise to many organizations and will continue to be actively involved in the following panels: JECM Integrated Product Team, Joint Infrared Countermeasures Multi Sensing Symposia Working Group (MSS IRCM WG), JASP, Foreign Material Exploitation Working Group, Foreign Material Program T&E Subcommittee, JCMT&E WG, and JCMT&E WG HFI subgroup lead. ***FY 2017 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 0605814OTE / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Joint Test and Evaluation (JT&E) In FY2017 JT&E plans on closing two projects that were started in FY 2015. One, the Joint Pre-/Post-Attack Operations Supporting Survivability & Endurability Joint Test, expected to close in June 2017, will develop and test procedures for protective posturing and mobile support that will mitigate electromagnetic-pulse effects on mission critical functions. The other project to close in FY2017 is the Joint Advanced Sensor to Shooter Joint Test, which is looking to develop, test and evaluate tactics, techniques, and procedures to more efficiently and effectively gain and maintain battle space awareness through integration of rapidly developed capabilities to support combat operations in anti-access and active denial environments Two projects from FY 2016 will continue through FY 2017. Four new feasibility studies are expected be conducted in FY 2017, two of which will be selected to conduct joint tests. Threat Systems In FY 2017, Threat Systems will continue test planning working group participation and perform technical analyses to identify threat shortfalls; conduct special studies and provide current intelligence support tailored to specific U.S. weapon systems acquisitions based on the availability of funding. Threat Systems will: - Continue to provide intelligence support to DOT&E staff to address specific questions on threat systems affecting programs on the OSD T&E Oversight list and provide briefings and special intelligence reports when necessary. - Continue identifying initiatives to improve cyberspace threat representation and prediction, cyber-economic threats to DoD systems, and scalable cyberspace threat test environments that can interface with cyber test networks. - Continue identifying initiatives to conduct offensive cyber operations (OCO) and defensive cyber operations (DCO) without significantly impacting critical operational capabilities. - Continue initiatives to improve satellite and space threat representations. - Support the US warfighter by providing threat intelligence to ensure operational and developmental testing occurs against realistic threat representations. - Sustain and manage threat M&S to support test and evaluation by overseeing and coordinating intelligence community developed threat models, performing threat model anomaly resolution resolving differences from live fire testing, integrating threat models into T&E facilities and distributing performance and signature models to T&E users. - Manage Integrated Technical Evaluation and Analysis of Multiple Sources (ITEAMS) efforts supporting programs on the OSD Oversight T&E List by conducting intelligence “deep dives” to produce intelligence in sufficient detail to develop new threat test assets.			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 0605814OTE / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
- Represent DOT&E at foreign material exchanges, inter-agency coordinating groups, and non-proliferation groups to raise awareness of T&E needs for foreign material, coordinate service requirements, and de-conflict and prioritize foreign material requirements for T&E. - Review validation reports to independently ensure that correct threat data and critical parameters are presented in the report to assess the threat representation's capabilities to replicate a real world threat system. - Represent DOT&E at the Intelligence Mission Data Oversight Board responsible for development, production and sharing issues affecting the intelligence data supporting weapons systems acquisition. - Oversee legacy DOT&E investments and continue management and oversight of legacy and new Test Resource Management Center-funded threat system investments. - Continue ITEAMS leading to the development of new threat systems for T&E. These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is realistic and suitable, and promotes common solutions to Service threat representation needs. The Center The Center will test, analyze, and report on more than 30 systems, with special emphasis on aircraft survivability, CM/CCM employment, warning and targeting systems, and PGWs. Each program supported will receive an independent assessment of our data/findings and test support for CM/ CCM evaluations. The Center will continue to emphasize support of the DOT&E enterprise, with a clear focus on Title 10 weapons systems, aircraft survivability and hostile fire initiatives. Furthermore, the Center will continue to provide CM expertise in pre-deployment events and training, as well as CM/CCM-focused TTP development. The Center plans to complete an Integrated Aircraft Survivability Equipment Test Methodology assessment which will help define new T&E capabilities needed to meet future program T&E requirements. The Center will continue Improvement and Modernization (I&M) efforts to improve our T&E capabilities. The Center will continue to work with the TSWG-sponsored HSIG model. Our support will be distributed across all the Services, as well as intelligence agencies and research and development activities. The Center will provide expertise to many organizations and will continue to be actively involved in the following panels: JECM Integrated Product Team, Joint Infrared Countermeasures Multi Sensing Symposia Working Group (MSS IRCM WG), JASP, Foreign Material Exploitation Working Group, Foreign Material Program T&E Subcommittee, JCMT&E WG, and JCMT&E WG HFI subgroup lead. 5th Generation Aerial Target (5GAT)			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 0605814OTE / *OTA&A*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
In FY17, the 5th Generation Aerial Target program will complete the government owned air vehicle and subsystems layout. The program will begin tooling and parts fabrication using carbon composite manufacturing methods. In addition, the program will begin the electronic attack equipment integration.			
Accomplishments/Planned Programs Subtotals	47.346	45.763	52.631

	FY 2015	FY 2016
Congressional Add: Joint Test and Evaluation ***FY 2015 Accomplishments:*** Funding provided one additional Joint Test and six Quick Reaction Tests. ***FY 2016 Plans:*** Funding is anticipated to provide nine additional Quick Reaction Tests.	18.000	10.000
Congressional Add: Threat Resource Analysis ***FY 2015 Accomplishments:*** Congressional add funds were used to increase threat intelligence support for cyber, space and ballistic missile to DOT&E to define future threats and improve threat realism in testing; also expanded the modeling and simulation configuration management to include Radio Frequency. ***FY 2016 Plans:*** Funds will be used to improve threat realism for testing. Specifically, increase cyber intelligence support to improve emerging cyberspace threat representation, prediction and threat environments; validate electronic warfare/cyber convergence efforts; and standardize approach for cyber threat folder creation. Funds will also be used to extend validation support, improve automated tools that provide intelligence support, and improve the fidelity and availability of models and simulations needed for Test & Evaluation.	5.000	8.000
Congressional Adds Subtotals	23.000	18.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not Applicable

Exhibit R-2A, RDT&E Project Justification: PB 2017 Operational Test and Evaluation, Defense		Date: February 2016
Appropriation/Budget Activity 0460 / 6	**R-1 Program Element (Number/Name)** PE 0605814OTE / *Operational Test Activities and Analyses*	**Project (Number/Name)** 0605814OTE / *OTA&A*

E. Performance Metrics

Performance Measure: Percentage of required products, such as test planning documents, tactics, techniques, procedures, threat characteristics, assessments, and reports that are developed and delivered to program managers and customers on time. The on-time completion rate was computed on the basis of the number of required products that were submitted within established time standards relative to the total number of such products that fell due during the fiscal year.