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**Department of Defense
Fiscal Year (FY) 2011 President's Budget**

February 2010



Operational Test and Evaluation, Defense

Justification Book

Operational Test and Evaluation, Defense - 0460

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Operational Test and Evaluation, Defense • President's Budget FY 2011 • RDT&E Program

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Defense-Wide
 FY 2011 President's Budget
 Exhibit R-1
 (Dollars in Thousands)

Date: 21 Jan 2010

Appropriation: 0460D Operational Test & Eval, Defense

Line No	Program Element Number	Item	Act	FY 2009	FY 2010	FY 2011	Sec
1	0605118OTE	Operational Test and Evaluation	06	53,052	57,902	59,430	U
2	0605131OTE	Live Fire Test and Evaluation	06	11,541	12,234	12,899	U
3	0605814OTE	Operational Test Activities and Analyses	06	120,609	118,101	122,581	U
		RDT&E Management Support		185,202	188,237	194,910	
		Total Operational Test & Eval, Defense		185,202	188,237	194,910	

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Operational Test and Evaluation, Defense • President's Budget FY 2011 • RDT&E Program

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

Budget Activity 06: RDT&E Management Support

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Operational Test and Evaluation, Defense • President's Budget FY 2011 • RDT&E Program

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

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Operational Test Activities and Analyses	0605814OTE	03	06.....	15
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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Operational Test and Evaluation, Defense **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605118OTE: <i>Operational Test and Evaluation</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	53.052	57.902	59.430	0.000	59.430	61.123	64.548	65.927	67.338	Continuing	Continuing
1: <i>OT&E</i>	53.052	57.902	59.430	0.000	59.430	61.123	64.548	65.927	67.338	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Director of Operational Test and Evaluation (DOT&E) is responsible under Title 10 for policy and procedures for all aspects of operational test and evaluation 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 of 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.

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

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 program and administrative and financial support services related to the conduct of operational test and evaluation.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Operational Test and Evaluation, Defense	DATE: February 2010
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APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605118OTE: <i>Operational Test and Evaluation</i>
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B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	53.052	58.647	0.000	0.000	0.000
Current President's Budget	53.052	57.902	59.430	0.000	59.430
Total Adjustments	0.000	-0.745	59.430	0.000	59.430
• Congressional General Reductions		-0.745			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Program Adjustment	0.000	0.000	59.430	0.000	59.430

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Operational Test and Evaluation, Defense **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605118OTE: <i>Operational Test and Evaluation</i>	PROJECT 1: <i>OT&E</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
1: <i>OT&E</i>	53.052	57.902	59.430	0.000	59.430	61.123	64.548	65.927	67.338	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Director is responsible under Title 10 for policy and procedures for all aspects of operational test and evaluation 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 of 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.

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

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 program and administrative and financial support services related to the conduct of operational test and evaluation.

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

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Operational Test and Evaluation, Defense **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605118OTE: <i>Operational Test and Evaluation</i>	PROJECT 1: <i>OT&E</i>
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B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>This effort is in direct support of the Director’s Title 10 responsibilities. FY 2010 funds will provide 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 the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (OUSD(AT&L)). Key elements of DOT&E oversight authority are identified in Calendar Year 2010 Office of the Secretary of Defense Test and Evaluation Oversight List.</p> <p>Information Assurance and Interoperability Evaluations</p> <p>Approximately 35 information assurance and interoperability assessments will be executed during FY 2010 COCOM and Service exercises. Full assessment of warfighter responses to computer network attack (ability to protect, detect, react, and restore) will be captured in all information assurance events. Portrayal of advanced threats will be included in several events. Interoperability assessments will be guided by a more rigorous process that includes expanded research and linkage to warfighter mission threads. In partnership with Joint Forces Command, several interoperability assessments will be planned and executed with emphasis on the systems and capabilities contained in the C2 Optimum Capability Mix Study. Assessment support to units deploying to theaters of operation will continue as needed. Fiscal year 2010 information assurance and interoperability evaluations will include trend analyses compared with prior year results, both within and across COCOMs. Critical findings will be transmitted to Service and DoD leadership for their awareness and remediation, as appropriate. The Information Operations Range will be examined in a demonstration as a possible venue for added operational realism and required security during OT&E and exercise assessments.</p> <p><i>FY 2011 Base Plans:</i> Operational Test and Evaluation Oversight</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Operational Test and Evaluation, Defense		DATE: February 2010									
APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605118OTE: <i>Operational Test and Evaluation</i>	PROJECT 1: <i>OT&E</i>									
C. Other Program Funding Summary (\$ in Millions) N/A											
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. Actual Performance and Goals: Operational Test and Evaluation On-Time Completion Rate <table border="0"> <tr> <td>FY 2009</td> <td>FY 2010</td> <td>FY 2011</td> </tr> <tr> <td>Actual</td> <td>Goal</td> <td>Goal</td> </tr> <tr> <td>95%</td> <td>96%</td> <td>97%</td> </tr> </table> <p>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. DOT&E plans to maintain its on-time completion rates for FY 2010 and FY 2011 through continued management emphasis on timely delivery of required products to customer activities.</p>			FY 2009	FY 2010	FY 2011	Actual	Goal	Goal	95%	96%	97%
FY 2009	FY 2010	FY 2011									
Actual	Goal	Goal									
95%	96%	97%									

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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Operational Test and Evaluation, Defense **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605131OTE: <i>Live Fire Test and Evaluation</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	11.541	12.234	12.899	0.000	12.899	13.661	13.996	14.339	14.691	Continuing	Continuing
2: <i>LFT&E</i>	11.541	12.234	12.899	0.000	12.899	13.661	13.996	14.339	14.691	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element (PE) 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. The LFT&E program is essential, especially in view of the escalating costs of technologically sophisticated weapons systems.

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.

This program element includes funds to obtain Federally Funded Research and Development Center (FFRDC) expertise in performing analyses in support of described tasks, as well as travel funds to carry out the LFT&E program.

This program element is budgeted in Budget Activity 6, RDT&E Management Support, to support LFT&E management activities for the oversight of RDT&E of new systems, as well as RDT&E of fielded systems.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Operational Test and Evaluation, Defense	DATE: February 2010
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APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605131OTE: <i>Live Fire Test and Evaluation</i>
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B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	11.541	12.285	0.000	0.000	0.000
Current President's Budget	11.541	12.234	12.899	0.000	12.899
Total Adjustments	0.000	-0.051	12.899	0.000	12.899
• Congressional General Reductions		-0.051			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Program Adjustment	0.000	0.000	12.899	0.000	12.899

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Operational Test and Evaluation, Defense **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605131OTE: <i>Live Fire Test and Evaluation</i>	PROJECT 2: <i>LFT&E</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
2: <i>LFT&E</i>	11.541	12.234	12.899	0.000	12.899	13.661	13.996	14.339	14.691	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This Program Element (PE) 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. The LFT&E program is essential, especially in view of the escalating costs of technologically sophisticated weapons systems.

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.

This program element includes funds to obtain Federally Funded Research and Development Center (FFRDC) expertise in performing analyses in support of described tasks, as well as travel funds to carry out the LFT&E program.

This program element is budgeted in Budget Activity 6, RDT&E Management Support, to support LFT&E management activities for the oversight of RDT&E of new systems, as well as RDT&E of fielded systems.

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Live Fire Test and Evaluation	11.541	12.234	12.899	0.000	12.899

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Operational Test and Evaluation, Defense				DATE: February 2010						
APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0605131OTE: <i>Live Fire Test and Evaluation</i>		PROJECT 2: <i>LFT&E</i>						
B. Accomplishments/Planned Program (\$ in Millions)										
<p>improving modeling and simulation tools by providing validation data. JLF Sea projects will continue to develop key components of alternatives to traditional shock trials of ships and submarines, will begin to investigate ship vulnerabilities in the areas of commercial standards, equipment damage, and compartment fires, and will investigate vulnerabilities of designs and components for new ships.</p> <p><i>FY 2011 Base Plans:</i> Major Test and Evaluation Programs</p> <p>This is a continuing effort. The FY 2011 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 developed and approved annually.</p> <p>JLF Programs</p> <p>Conduct tests of fielded systems not previously tested under Air, Land, or Sea Joint Live Fire programs to support DOT&E and warfighter needs. The need for these tests result from systems being exposed to new threats, used in new unanticipated tactics, or being operated in new combat environments, and the subsequent need for an assessment of their performance. As necessary continue to support and partner with the JIEDDO. Continue initiatives with crew survivability. Address urgent requests that directly support deployed warfighters and issues of importance to the Congress.</p>						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals						11.541	12.234	12.899	0.000	12.899
C. Other Program Funding Summary (\$ in Millions) N/A										
D. Acquisition Strategy N/A										

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Operational Test and Evaluation, Defense		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605131OTE: <i>Live Fire Test and Evaluation</i>	PROJECT 2: <i>LFT&E</i>

E. Performance Metrics

Performance Measure: Percentage of required live fire 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. Percentage of required live fire 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.

Actual Performance and Goals:

Live Fire Testing

FY 2009	FY 2010	FY 2011
Actual	Goal	Goal
96%	97%	98% (On-Time Completion Rate)

The on-time completion rate was computed on the basis of the number of beyond low-rate initial production live fire test and evaluation reports, Joint Live Fire Quick Look Reports, and Joint Live Fire Test reports that were submitted within established time standards relative to the total number of such products that fell due during the fiscal year. DOT&E plans to achieve its goals for FY 2010 and FY 2011 through continued management emphasis on timely delivery of required reports to customer activities.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Operational Test and Evaluation, Defense **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605814OTE: <i>Operational Test Activities and Analyses</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	120.609	118.101	122.581	0.000	122.581	124.524	126.369	128.327	130.447	Continuing	Continuing
1: OTA&A	120.609	118.101	122.581	0.000	122.581	124.524	126.369	128.327	130.447	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element consists of two programs: Test and Evaluation (T&E) Programs and T&E Independent Activities.

The Test and Evaluation programs are continuing efforts that provide management and oversight of test and evaluation functions and expertise to the Department of Defense (DoD). The T&E programs consist of five activities: Joint Test and Evaluation (JT&E); Threat Systems (TS); Center for Countermeasures (CCM); Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/ME); and, Joint Aircraft Survivability Program (JASP).

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 test 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 (OUSD(AT&L)). Threat Systems provides DOT&E assessment officers 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) Test and Evaluation Center, serves as DoD's independent tester for CM assessments of U.S. and foreign precision guided weapons (PGWs) and sensor systems, CMs, counter-countermeasures (CCMs), and warning devices. The Center conducts tests, analyzes test results and provides CM expertise that benefits the Services, Joint activities, T&E Agencies, DoD Acquisition Community, the Intelligence Community, Homeland Defense and Overseas Contingency Operations (OCO). Data collected during Center test activities provides valuable information to OSD assessment officers for select oversight

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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Operational Test and Evaluation, Defense **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

0460: *Operational Test and Evaluation, Defense*
BA 6: *RDT&E Management Support*

R-1 ITEM NOMENCLATURE

PE 0605814OTE: *Operational Test Activities and Analyses*

programs. The Center assesses current and developing systems, using carefully developed test and evaluation methodologies to provide the basis for understanding how CMs might affect systems used in current and future battlefields. Additionally, the Center develops CM specific test equipment that can be used for both Title 10 programs and OCO urgent operational needs.

The Joint Logistics Commanders Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/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. JTTCG/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. JTTCG/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 learned (Enduring Freedom and Iraqi Freedom) and the needs of Combatant Commands, Services, Military Targeting Committee, and Operational Users Working Groups input for specific weapon-target pairings and methodologies.

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 Aeronautical Systems 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 and is also an Executive Agent for the Survivability Vulnerability Information Analysis Center (SURVIAC), the repository for aircraft survivability information.

The Test and Evaluation Independent Activities program is the only source of funding for DOT&E studies, analyses, and management to provide continuing support of policy development oversight of the DoD test and evaluation practices, infrastructure and resources; and transformation of test methods and infrastructure to ensure future defense systems provide necessary joint warfighting capabilities. Studies and analyses examine the implications and consequences of current and proposed policy, plans, operations, strategies, and budgets and are essential for the accomplishment of the DOT&E mission. This program element funds travel in support of its activities.

This program element is budgeted in Budget Activity 6, RDT&E Management Support, to support management activities for the DOT&E oversight responsibility for test and evaluation and test and evaluation resources.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Operational Test and Evaluation, Defense	DATE: February 2010
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APPROPRIATION/BUDGET ACTIVITY 0460: <i>Operational Test and Evaluation, Defense</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605814OTE: <i>Operational Test Activities and Analyses</i>
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B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	122.429	119.838	0.000	0.000	0.000
Current President's Budget	120.609	118.101	122.581	0.000	122.581
Total Adjustments	-1.820	-1.737	122.581	0.000	122.581
• Congressional General Reductions		-1.737			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	-1.820	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Program Adjustment	0.000	0.000	122.581	0.000	122.581

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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
1: OTA&A	120.609	118.101	122.581	0.000	122.581	124.524	126.369	128.327	130.447	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This program element consists of two programs: Test and Evaluation (T&E) Programs and T&E Independent Activities.

The Test and Evaluation programs are continuing efforts that provide management and oversight of test and evaluation functions and expertise to the Department of Defense (DoD). The T&E programs consist of five activities: Joint Test and Evaluation (JT&E); Threat Systems (TS); Center for Countermeasures (CCM); Joint Technical Coordinating Group for Munitions Effectiveness (JTCEG/ME); and Joint Aircraft Survivability Program (JASP).

The Test and Evaluation Independent Activities program is the only source of funding for DOT&E studies, analyses, and management to provide continuing support of policy development oversight of the DoD test and evaluation practices, infrastructure and resources; and transformation of test methods and infrastructure to ensure future defense systems provide necessary joint warfighting capabilities. Studies and analyses examine the implications and consequences of current and proposed policy, plans, operations, strategies, and budgets and are essential for the accomplishment of the DOT&E mission.

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Operational Test Activities and Analyses <i>FY 2009 Accomplishments:</i> Joint Test and Evaluation (JT&E) In FY 2009 JT&E had four projects close down, all of which started in FY 2006. The projects closing in this fiscal year work on a broad range of issues, from joint test methods and processes to command and control of network enabled weapons. By the time it closed in FY 2009, the Joint Test and Evaluation Methodology project produced the guidelines and procedures for conducting live, virtual,	120.609	118.101	122.581	0.000	122.581

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>and constructive operational testing in simulated joint military operations. This allows the Services to test as they fight. Another project that closed in FY 2009 is the Joint Mobile Network Operations project. It helped the Services integrate their mobile networks so that any Service member can cross through any Service mobile network and have access to his data and services. One of the on-going projects, Joint Air Defense Operations-Homeland, concentrates on two aspects of planning the use of deployable air and cruise missile defense assets: the effective use of combined (U.S. and Canadian) air and cruise missile defense capabilities to defeat asymmetric aerial threats; and, interagency planning to incorporate air and cruise missile defense capabilities. On a continual basis, JT&E reviews nominations for new projects, manages on-going projects, and ensures that closing projects are debriefed, and final reports are distributed to Service organizations as appropriate.</p> <p>Threat Systems</p> <p>During FY 2009, Threat Systems initiated development of standard, DIA-validated airborne jammer models for use throughout the Department to evaluate jamming effects on U.S. aircraft; continued to address testing against advanced threats that may be encountered in such countries as Iran and China; continued test planning working group participation to identify threat shortfalls early in the acquisition process.</p> <p>Special studies were conducted and provided current intelligence support tailored to specific U.S. weapon systems acquisition; design experiments to demonstrate test facility connectivity for enhanced weapons systems testing and improve end-to-end testing of U.S. threat warning and countermeasures systems; continued with the second year of a four-year project to integrate current intelligence community-based missile models into all DoD Hardware-In-The-Loop countermeasure test facilities. Also investigated how to develop and implement a more robust open-air threat environment to make operational testing more realistic; initiated efforts to develop threat test assets that can be used for testing in a joint test environment; developed and validated a new class of armored vehicle target to be used during T&E of mobile armor gun systems; initiated the development of new target</p>					

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>control interface standards; and completed Phase I of a comprehensive study to determine which 5th Generation fighter aircraft attributes will be critical for future full scale threat representations.</p> <p>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.</p> <p>Center for Countermeasures (the Center)</p> <p>The Center tested, analyzed, and reported on more than 25 U.S. and foreign PGW systems/ components in a CM environment as well as CM equipment and threat-warning systems. Each program supported received an independent assessment of our findings and test support for CM/CCM evaluations. Approximately 33% of the programs that received support were under DOT&E oversight; 29% of the programs were subsystems on DOT&E oversight platforms; 19% were smaller programs that do not meet oversight criteria; 5% were foreign systems and 14% were pre-deployment events and training, tactics and procedures (TTP) assistance for exercise support. Thirty-eight percent of the Center's efforts were directly tied to OCO. The Center continued development of the Central Test and Evaluation Investment Program (CTEIP) sponsored, Joint IRCM Threat System (JMITS), Towed Aerial Plume Simulator (TAPS) and Multi-Spectral Sea and Land Target Simulator (MSALTS) that will be used in support of testing for both Title 10 programs and OCO aircraft survivability equipment (ASE) urgent operational needs. Our support was distributed across all the Services as well as intelligence agencies and research and development activities.</p> <p>The Center provided expertise to many organizations and was actively involved in the following panels: the Technical Cooperation Program, Foreign Material Exploitation Working Group, Foreign Material Program Test and Evaluation Subcommittee, Joint Project Milari Working Group, Foreign Material Exploitation Working Group, Joint Expendable Countermeasures (JECM) Integrated Product Team, Joint Technical Coordinating Group for Munitions Effectiveness (JTCEG/ME), Infrared</p>					

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>(TACTS) at various ranges; at NAS Oceana, for each of the daily training missions, JAAM integrates aircraft Time Space Position Information (TSPI) telemetry into flight operation video playback which is then used for formal pilot debriefs, authoritative shot/tactics validation and performance evaluation.</p> <p>During FY 2009, JTCG/ME continued to: (i) implement a capabilities-based JMEM, accounting for newly fielded systems employing traditional and non-traditional damage mechanisms; (ii) expand existing databases to incorporate newly fielded weapons (i.e., Air-to-Surface, Surface-to-Surface Direct/Indirect Fire, and Antiair); (iii) enhance collateral damage methods; and, improve methods for estimating weapons effects against above/below ground hardened target to include MOUT structures; (iv) improve connectivity to real time planning systems assessing time sensitive targets; and, (v) develop JMEM data for most critical Combatant Commander identified systems, reduce DVD-ROM update cycles through incremental updates; and develop tri-Service JMEM operation tools for JMEM/ FX and IO programs.</p> <p>Joint Aircraft Survivability Program (JASP)</p> <p>In FY 2009 the JASP continued work on 30 multi-year RDT&E projects and initiated 17 new projects approved by the JASP Principal Members Steering Group and OSD/DOT&E. In the area of susceptibility reduction, the JASP addressed improving directed energy infrared countermeasures, electronic countermeasures technology and techniques, aircrew situational awareness and immediate warfighter needs. In the area of vulnerability reduction, the JASP continued to address requirements for lighter and more effective armor, fuel containment, fire suppression; aircraft flare systems and aircrew and passenger protection. In aircraft survivability M&S, the JASP continued to improve survivability M&S credibility, address warfighter 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.</p>					

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>The JCAT continued to support the USMC, Army and Air Force by assessing combat damage incidents, training warfighters 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. The JASP, working with OUSD(AT&L) and OSD/DOT&E, conducted the Study on Rotorcraft Survivability to respond to Congress as requested in Section 1043 of the 2009 National Defense Authorization Act.</p> <p>Test and Evaluation Independent Activities</p> <p>FY 2009 funds were used to provide continuing support of policy development oversight of the DoD test and evaluation practices, infrastructure and resources; and transformation of test methods and infrastructure to ensure future defense systems provide necessary joint warfighting capabilities. Funding was used to support the development of technical alternatives on issues affecting test and evaluation resources and infrastructure. Also funded administrative support to carry out oversight of DOT&E programs as well as provide accounting and financial management capability to DOT&E. This program element funds travel in support of its activities.</p> <p>This program element is budgeted in Budget Activity 6, RDT&E Management Support, to support management activities for the DOT&E oversight responsibility for test and evaluation and test and evaluation resources.</p> <p><i>FY 2010 Plans:</i> Joint Test and Evaluation (JT&E)</p> <p>In FY 2010 JT&E has two projects slated for closing and an estimated five projects on-going from FYs 2007, 2008 and 2009. Joint Non-Kinetic Effects Integration Joint Test, scheduled to close in FY</p>					

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>2010, is developing the tactics, techniques, and procedures to integrate electronic, computer network attacks, and space control during time sensitive planning activities against adversary control systems and associated infrastructures and processes. Another project scheduled to close in FY 2010 is the Joint Electronic Protection for Air Combat Joint Test that is developing the systems architecture and processes that will allow a pilot to receive information from joint military assets when the pilot's electronic equipment is being jammed. On a continual basis, JT&E reviews nominations for new projects, manages on-going projects, and ensures that closing projects are debriefed, and final reports are distributed to Service organizations as appropriate.</p> <p>Threat Systems</p> <p>In FY 2010, Threat Systems will complete development of standard, DIA-validated airborne jammer models for use throughout the Department to evaluate effects on U.S. aircraft; evaluate proposals to develop and implement a more robust open-air threat environment to make operational testing more realistic; continue to address testing against advanced threats that may be encountered in such countries as Iran and China.</p> <p>Threat Systems will also continue test planning working group participation to identify threat shortfalls; conduct special studies and provide current intelligence support tailored to specific U.S. weapon systems acquisition; demonstrate test facility connectivity for enhanced weapons systems testing and improving end-to-end testing of U.S. threat warning and countermeasures systems. Efforts will continue to develop threat test assets that can be used for testing in a joint test environment; continue with the third year of a four-year project to integrate current intelligence community-based missile models into all DoD Hardware-In-The-Loop countermeasure test facilities; ensure the adequacy of full scale rotary wing targets through comprehensive requirements analysis, definition of design parameters, and prototype development; implement and demonstrate recently developed standard target control interfaces and architectures; and develop a cost effective full scale aerial target design that embodies the critical attributes of future 5th generation threat fighter aircraft.</p>					

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Symposia Working Group, Joint Aircraft Survivability Program and an OSD special interest working group, Joint IRCM T&E working group</p> <p>Joint Technical Coordinating Group for Munitions Effectiveness (JTTCG/ME)</p> <p>In support of operational commanders, DoD targeteers, weaponeers, and planners, the JTTCG/ME developed and released JMEM Weaponeering System (JWS) v2.0.1 in November 2009. In addition, development of JWS v2.1 will be ongoing throughout FY10. Joint-Anti-air Combat Effectiveness System (J-ACE) Air Superiority (AS) v4.1 is to be released in August 2010.</p> <p>JWS v2.0.1 included an additional 140 high priority CoCOM target requirements, as well as new/updated delivery accuracies for 14 systems. JWS v2.1 will contain a significant methodology update for assessing infrastructure targets, new target data, weapons data and delivery accuracies. J-ACE v4.1 will contain additional threat Surface-to-Air (SAM) Flyout Models (FOMs), additional threat Air-to-Air missile FOMs and improved Blue Air-to-Air missile FOMs.</p> <p>JWS v2.1 will contain the Fast Integrated Structural Tool (FIST). FIST is the future JMEM operational-level tool that incorporates the integral modules from Building Analysis Module (BAM) and Hardened Target Module (HTM) to create a merged tool that generates weapon effectiveness and damage assessments against infrastructure targets to include buildings, bunkers, and tunnels. In addition, JWS v2.1 release will contain approximately 180 new/updated targets, 15 new/updated munitions, new Explosive Equivalent Weights based on blast testing and an improved 3-D viewer.</p> <p>J-ACE 4.1 release will be developed and release in August 2010. Weapon Engagement Zone (WEZ) software, consistent with Operational Flight Programs in the currently fielded fighter fleet will be provided for U.S. missiles; NASIC "FrankenWEZ" software will be used for threat aircraft missiles engagement zone determination. New or updated air-to-air missile simulations will be added for the US AIM-7, AIM-9, and AIM-120 and NASIC threat AA-12, Magic 2, and PL-12. Sixteen new</p>					

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>JASP will apply resources to address aircraft occupant casualties and rotorcraft combat survivability. In the area of susceptibility reduction, the JASP will address improving directed energy infrared countermeasures, electronic countermeasures technology and techniques, aircrew situational awareness and immediate warfighter 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 warfighter 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.</p> <p>The JCAT will continue to support the USMC, Army and Air Force by assessing combat damage incidents, training warfighters 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.</p> <p>Test and Evaluation Independent Activities</p> <p>During FY 2010 funding will provide continuing analysis and analytical support for the Director, Operational Test and Evaluation, Title 10, United States Code, roles and responsibilities with regard to operational and live fire test and evaluation as the principal adviser to the Secretary of Defense and the USD(AT&L) and as the principal test and evaluation official within the senior management of the DoD. Funding also supports the Director's operational and live fire test resource requirements for the statutory strategic plan. This plan reflects the needs of the Department with respect to test and</p>					

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C. Other Program Funding Summary (\$ in Millions) N/A											
D. Acquisition Strategy N/A											
E. Performance Metrics Performance Measure: Percentage of required products, such as test planning documents, munitions effectiveness manuals, tactics-techniques-procedures, threat characteristics, assessments, and reports that are developed and delivered to program managers and customers on time. Actual Performance and Goals Operational Test Activities and Analyses On-Time Completion Rate <table border="0"> <tr> <td>FY 2009</td> <td>FY 2010</td> <td>FY 2011</td> </tr> <tr> <td>Actual</td> <td>Goal</td> <td>Goal</td> </tr> <tr> <td>91%</td> <td>93%</td> <td>94%</td> </tr> </table> <p>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. DOT&E plans to achieve its goals for FY 2010 and FY 2011 through increased management emphasis on timely delivery of required products to customer activities.</p>			FY 2009	FY 2010	FY 2011	Actual	Goal	Goal	91%	93%	94%
FY 2009	FY 2010	FY 2011									
Actual	Goal	Goal									
91%	93%	94%									

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