Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Army

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

2040: Research, Development, Test & Evaluation, Army

PE 0605606A: AIRCRAFT CERTIFICATION

BA 6: RDT&E Management Support

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	5.001	3.746	5.055	0.000	5.055	5.731	8.502	6.162	6.193	Continuing	Continuing
092: AIRCRAFT CERTIFICATION	5.001	3.746	5.055	0.000	5.055	5.731	8.502	6.162	6.193	Continuing	Continuing

#### A. Mission Description and Budget Item Justification

The Airworthiness Certification program ensures flight safety and safe operation of Army aircraft and aviation systems by means of technical design approval and qualification of systems to appropriate airworthiness standards. It provides independent airworthiness qualification of all assigned developmental and in-production Army aircraft, both manned and unmanned, as required by AR 70-62, and is essential for ensuring the safe operation of Army aircraft. This program, when fully funded, performs all engineering functions (design, analysis, testing, demonstrations, and system specification compliance) essential for certifying the airworthiness of assigned Army aircraft, to include performing safety-offlight investigations/assessments, evaluating system risks, developing Airworthiness Impact Statements, developing Airworthiness Flight Releases, and evaluating Safety of Flight Messages and Aviation Safety Action Messages for new and upgraded aircraft systems. This program also provides management/execution of the Army's Aeronautical Design Standards (ADS) program; management/execution of airworthiness approval for new systems and materiel changes for all assigned Army aircraft systems; airworthiness engineering support to the Program Executive Office for Aviation (PEO Avn) and the Technology Applications Program Office (TAPO, the Army's Special Operations Aircraft program office) in developing requirements for major development/modification and for any future systems; and management of the test and evaluation process in support of the airworthiness qualification process. The Airworthiness Certification program also performs general research and development in support of aircraft qualification and overarching airworthiness projects that involve multiple aircraft models. Current ongoing programs requiring airworthiness qualification are PEO Aviation and TAPO Future Force systems including Longbow Apache Block II and III; Chinook F-model; Blackhawk M-model and M-model upgrade; Special Operations MH-47G and MH-60M; Armed Reconnaissance Helicopter; Light Utility Helicopter; Joint Cargo Aircraft; Extended Range/Multi Purpose (ER/MP) unmanned aircraft system (UAS); Aerial Common Sensors aircraft; and Shadow-C UAS. Additionally the Airworthiness Certification program supports application of other critical aviation subsystems onto Army aircraft, including Aircraft Survivability Equipment (e.g. Advanced Threat Infrared Countermeasures (ATIRCM), Common Missile Warning System (CMWS)), Aviation Mission Equipment (e.g. advanced multiband radios like the Joint Tactical Radio System (JTRS), digital data links), Common Sensor (electro-optical multi-spectrum visual sensor), and Blue Force Tracker. The current D092 funding profile for the FY11 President's Budget Submission marginally funds the airworthiness certification program, and hence the effort will be limited to resourcing civil derivative aircraft technical qualifications through the Federal Aviation Administration's Military Certification Office; development of airworthiness procedures, specifications, critical standards, and other design and qualification documents; participation in airworthiness related tri-service activities (e.g. National Airworthiness Council, Joint Logistics Commanders Group) and international airworthiness related activities mandated by treaty (e.g. Flight Into Nonsegregated Airspace (FINAS)); and limited early airworthiness involvement in Technology Transition projects (e.g. Joint Heavy Lift (JHL) aircraft, Joint Multi Role (JMR) helicopter, and other Office of the Secretary of Defense initiatives).

# Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Army DATE: February 2010

#### APPROPRIATION/BUDGET ACTIVITY

2040: Research, Development, Test & Evaluation, Army

BA 6: RDT&E Management Support

### R-1 ITEM NOMENCLATURE

PE 0605606A: AIRCRAFT CERTIFICATION

### **B. Program Change Summary (\$ in Millions)**

	<u>FY 2009</u>	<u>FY 2010</u>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>
Previous President's Budget	5.037	3.766	5.128	0.000	5.128
Current President's Budget	5.001	3.746	5.055	0.000	5.055
Total Adjustments	-0.036	-0.020	-0.073	0.000	-0.073
<ul> <li>Congressional General Reductions</li> </ul>		-0.020			
<ul> <li>Congressional Directed Reductions</li> </ul>		0.000			
<ul> <li>Congressional Rescissions</li> </ul>	0.000	0.000			
<ul> <li>Congressional Adds</li> </ul>		0.000			
<ul> <li>Congressional Directed Transfers</li> </ul>		0.000			
<ul> <li>Reprogrammings</li> </ul>	0.000	0.000			
<ul> <li>SBIR/STTR Transfer</li> </ul>	-0.036	0.000			
<ul> <li>Adjustments to Budget Years</li> </ul>	0.000	0.000	-0.073	0.000	-0.073

### **Change Summary Explanation**

Change Summary Explanation: Funds realigned to higher priority requirements.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army									<b>DATE:</b> February 2010			
APPROPRIATION/BUDGET ACTI 2040: Research, Development, Test & E BA 6: RDT&E Management Support		my		R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICATION			PROJECT 092: AIRCRAFT CERTIFICATION					
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	
092: AIRCRAFT CERTIFICATION	5.001	3.746	5.055	0.000	5.055	5.731	8.502	6.162	6.193	Continuing	Continuing	
Quantity of RDT&E Articles												

#### Note

Not applicable for this item.

#### A. Mission Description and Budget Item Justification

The Airworthiness Certification program ensures flight safety and safe operation of Army aircraft and aviation systems by means of technical design approval and qualification of systems to appropriate airworthiness standards. It provides independent airworthiness qualification of all assigned developmental and in-production Army aircraft, both manned and unmanned, as required by AR 70-62, and is essential for ensuring the safe operation of Army aircraft. This program, when fully funded, performs all engineering functions (design, analysis, testing, demonstrations, and system specification compliance) essential for certifying the airworthiness of assigned Army aircraft, to include performing safety-offlight investigations/assessments, evaluating system risks, developing Airworthiness Impact Statements, developing Airworthiness Flight Releases, and evaluating Safety of Flight Messages and Aviation Safety Action Messages for new and upgraded aircraft systems. This program also provides management/execution of the Army's Aeronautical Design Standards (ADS) program; management/execution of airworthiness approval for new systems and materiel changes for all assigned Army aircraft systems; airworthiness engineering support to the Program Executive Office for Aviation (PEO Avn) and the Technology Applications Program Office (TAPO, the Army's Special Operations Aircraft program office) in developing requirements for major development/modification and for any future systems; and management of the test and evaluation process in support of the airworthiness qualification process. The Airworthiness Certification program also performs general research and development in support of aircraft qualification and overarching airworthiness projects that involve multiple aircraft models. Current ongoing programs requiring airworthiness qualification are PEO Aviation and TAPO Future Force systems including Longbow Apache Block II and III; Chinook F-model; Blackhawk M-model and M-model upgrade; Special Operations MH-47G and MH-60M; Armed Reconnaissance Helicopter; Light Utility Helicopter; Joint Cargo Aircraft; Extended Range/Multi Purpose (ER/MP) unmanned aircraft system (UAS); Aerial Common Sensors aircraft; and Shadow-C UAS. Additionally the Airworthiness Certification program supports application of other critical aviation subsystems onto Army aircraft, including Aircraft Survivability Equipment (e.g. Advanced Threat Infrared Countermeasures (ATIRCM), Common Missile Warning System (CMWS)), Aviation Mission Equipment (e.g. advanced multiband radios like the Joint Tactical Radio System (JTRS), digital data links), Common Sensor (electro-optical multi-spectrum visual sensor), and Blue Force Tracker. The D092 funding profile for the FY11 President's Budget Submission marginally funds the airworthiness certification program and hence the effort will be limited to resourcing civil derivative aircraft technical qualifications through the Federal Aviation Administration's Military Certification Office; development of airworthiness procedures, specifications, critical standards, and other design and qualification documents; participation in airworthiness related tri-service activities (e.g. National Airworthiness Council, Joint Logistics Commanders Group) and international airworthiness related activities mandated by treaty (e.g. Flight Into Nonsegregated Airspace (FINAS)); and limited early airworthiness involvement in Technology Transition projects (e.g. Joint Heavy Lift (JHL) aircraft, Joint Multi Role (JMR) helicopter, and other Office of the Secretary of Defense initiatives).

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army

APPROPRIATION/BUDGET ACTIVITY

2040: Research, Development, Test & Evaluation, Army
BA 6: RDT&E Management Support

DATE: February 2010

R-1 ITEM NOMENCLATURE
PE 0605606A: AIRCRAFT CERTIFICATION
092: AIRCRAFT CERTIFICATION

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

FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
0.001	0.000	0.000	0.000	0.000
0.000	0.001	0.000	0.000	0.000
	0.001	0.001 0.000	FY 2009 FY 2010 Base 0.001 0.000 0.000	FY 2009         FY 2010         Base         OCO           0.001         0.000         0.000         0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICATI		PROJECT 092: AIRCRA	PROJECT 092: AIRCRAFT CERTIFICATION		
B. Accomplishments/Planned Program (\$ in Millions)	-					
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #3  FY11 Base: Continue to conduct technical and airworthiness qualitaries airworthiness and system performance for Army force modernization (e.g. AH-64 Block III, UH-60M, UH-60M Upgrade, MH-47G, MH  FY 2009 Accomplishments: FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base	on aircraft systems or multi-system programs	0.000	0.000	0.001	0.000	0.001
FY 2011 OCO Plans: FY 2011 OCO						
Program #4  FY09: Conducted studies of Airworthiness Certification requireme technology transition programs (e.g. Joint Heavy Lift, Joint Multi-F Turbine Engine Program).		0.704	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army		<b>DATE:</b> February 2010					
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICATION		PROJECT 092: AIRCRA	AFT CERTIFI	ICATION		
B. Accomplishments/Planned Program (\$ in Millions)	1		1				
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2009 Accomplishments: FY 2009							
FY 2010 Plans: FY 2010							
FY 2011 Base Plans: FY 2011 Base							
FY 2011 OCO Plans: FY 2011 OCO							
Program #5		0.000	0.280	0.000	0.000	0.000	
FY10: Conduct studies of Airworthiness Certification requirements for future technology transition programs (e.g. Joint Heavy Lift, Joint Multi-Roll Aircontroller Engine Program).  FY 2009 Accomplishments:							
FY 2009 Accomptisaments. FY 2009							
FY 2010 Plans: FY 2010							
FY 2011 Base Plans: FY 2011 Base							
FY 2011 OCO Plans: FY 2011 OCO							

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army			<b>DATE:</b> February 2010				
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICA	PROJECT 092: AIRCRA	TECT AIRCRAFT CERTIFICATION				
B. Accomplishments/Planned Program (\$ in Millions)							
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
Program #6		0.000	0.000	0.735	0.000	0.735	
FY11 Base: Continue to conduct studies of Airworthiness Certification req and other technology transition programs (e.g. Joint Heavy Lift, Joint Multi Advanced Turbine Engine Program).	•						
FY 2009 Accomplishments: FY 2009							

FY 2010 Plans:

FY 2010

FY 2011 Base Plans:

FY 2011 Base

FY 2011 OCO Plans:

FY 2011 OCO

Program #7

FY09: Developed, implemented, and maintained Army Aeronaut

FY09: Developed, implemented, and maintained Army Aeronautical Design Standards, airworthiness procedures and tools, and overarching Airworthiness qualification documentation.

FY 2009 Accomplishments:

FY 2009

FY 2010 Plans:

FY 2010

2.342

0.000

0.000

0.000

0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army			<b>DATE:</b> February 2010					
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICAT	TION	PROJECT 092: AIRCR	RAFT CERTIFICATION				
B. Accomplishments/Planned Program (\$ in Millions)								
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total		
FY 2011 Base Plans: FY 2011 Base								
FY 2011 OCO Plans: FY 2011 OCO								
Program #8		0.000	2.571	0.000	0.000	0.000		
FY10: Develop, implement, and maintain Army Aeronautical Design Stan tools, and overarching Airworthiness qualification documentation.	dards, airworthiness procedures and							
FY 2009 Accomplishments: FY 2009								
FY 2010 Plans: FY 2010								
FY 2011 Base Plans: FY 2011 Base								
FY 2011 OCO Plans: FY 2011 OCO								
Program #9		0.000	0.000	2.656	0.000	2.656		
FY11 Base: Continue to develop, implement, and maintain Army Aeronau procedures and tools, and overarching Airworthiness qualification documents.								
FY 2009 Accomplishments: FY 2009								

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICAT	ION	<b>PROJECT</b> 092: <i>AIRCRAFT CERTIFICATION</i>			
B. Accomplishments/Planned Program (\$ in Millions)			I			
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #10		0.001	0.000	0.000	0.000	0.000
FY09: Conducted technical and airworthiness certification assessment modernization aircraft systems or programs (e.g. Advanced Threat Infr. Common Missile Warning System integration, Common Sensor integra	ared Countermeasures integration,					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #11		0.000	0.001	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army			<b>DATE:</b> February 2010					
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICATION  092: A			IECT AIRCRAFT CERTIFICATION				
B. Accomplishments/Planned Program (\$ in Millions)			1					
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total		
FY10: Conduct technical and airworthiness certification assessments of technodernization aircraft systems or programs (e.g. Advanced Threat Infrared Common Missile Warning System integration, Common Sensor integration FY 2009 Accomplishments:  FY 2009  FY 2010 Plans:	l Countermeasures integration,							
FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans:								
FY 2011 OCO								
Program #12  FY11 Base: Continue to conduct technical and airworthiness certification to Army force modernization aircraft systems or programs (e.g. Advanced integration, Common Missile Warning System integration, Common Sensor FY 2009 Accomplishments: FY 2010 Plans: FY 2010	Threat Infrared Countermeasures	0.000	0.000	0.001	0.000	0.001		

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: Febr	ruary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICATION		PROJECT 092: AIRCR	PROJECT 092: AIRCRAFT CERTIFICATION		
B. Accomplishments/Planned Program (\$ in Millions)						
	FY	2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #13  FY09: Provided technical and airworthiness qualification for Com Aviation Administration.  FY 2009 Accomplishments:	mercial Derivative Aircraft through the Federal	0.453	0.000	0.000	0.000	0.000
FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #14  FY10: Provide technical and airworthiness qualification for Comma Aviation Administration.  FY 2009 Accomplishments: FY 2009	nercial Derivative Aircraft through the Federal	0.000	0.505	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army		<b>DATE:</b> February 2010					
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICA				ICATION		
B. Accomplishments/Planned Program (\$ in Millions)							
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2010 Plans: FY 2010							
FY 2011 Base Plans: FY 2011 Base							
FY 2011 OCO Plans: FY 2011 OCO							
Program #15		0.000	0.000	0.548	0.000	0.548	
FY11 Base: Continue to provide technical and airworthiness qualification through the Federal Aviation Administration.	for Commercial Derivative Aircraft						
FY 2009 Accomplishments: FY 2009							
FY 2010 Plans: FY 2010							
FY 2011 Base Plans: FY 2011 Base							
FY 2011 OCO Plans: FY 2011 OCO							
Program #16		1.500	0.000	0.000	0.000	0.000	
FY09: Led and participated in national and international airworthiness ce working groups responsible for establishing and maintaining aircraft safet							

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army		<b>DATE:</b> February 2010				
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICAT	TION	PROJECT 092: AIRCRAFT CERTIFICATION			
B. Accomplishments/Planned Program (\$ in Millions)			ı			
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Airworthiness Council, Joint Logistics Commanders Group, Join Coordinating Committee, North Atlantic Treaty Organization (Management working groups).						
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #17		0.000	0.376	0.000	0.000	0.00
FY10: Lead and participate in national and international airworking groups responsible for establishing and maintaining air Airworthiness Council, Joint Logistics Commanders Group, Join Coordinating Committee, NATO working groups, Global Air Transcription.	craft safety for a fleet of aircraft (e.g. National nt Council on Aging Aircraft, Joint Propulsion					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0605606A: AIRCRAFT CERTIFICATION	ION	PROJECT 092: AIRCRAFT CERTIFICATION			
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #18		0.000	0.000	1.114	0.000	1.114
FY11 Base: Continue to lead and participate in national and international conferences and working groups responsible for establishing and maintain (e.g. National Airworthiness Council, Joint Logistics Commanders Group Propulsion Coordinating Committee, NATO working groups, Global Air FY 2009 Accomplishments:  FY 2009	ning aircraft safety for a fleet of aircraft, Joint Council on Aging Aircraft, Joint					
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #19 FY10: Small Business Innovative Research/Small Business Technology	Transfer Programs	0.000	0.012	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army			<b>DATE:</b> February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
2040: Research, Development, Test & Evaluation, Army	PE 0605606A: AIRCRAFT CERTIFICATION	092: <i>AIRCR</i>	AFT CERTIFICATION
BA 6: RDT&E Management Support			

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

	EV 2000	EX 2010	FY 2011	FY 2011	FY 2011
	FY 2009	FY 2010	Base	осо	Total
FY 2009 Accomplishments:					
FY 2009					
FY 2010 Plans:					
FY 2010					
FY 2011 Base Plans:					
FY 2011 Base					
FY 2011 OCO Plans:					
FY 2011 OCO					
F1 2011 OCO					
	Accomplishments/Planned Programs Subtotals 5.001	3.746	5.055	0.000	5.055

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

N/A

### **D.** Acquisition Strategy

N/A

### **E. Performance Metrics**

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.