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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2013 Air Force **DATE:** February 2012

<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305116F: <i>AERIAL TARGETS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	60.574	45.620	50.496	-	50.496	29.627	5.923	4.393	4.376	Continuing	Continuing
675136: <i>Target Systems Development</i>	5.756	6.462	6.945	-	6.945	6.993	5.923	4.393	4.376	Continuing	Continuing
675366: <i>QF-16</i>	54.818	39.158	43.551	-	43.551	22.634	-	-	-	Continuing	Continuing

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

Full-scale and subscale targets assure warfighters weapon systems will perform effectively against real-world enemy fighters and cruise missiles. Aerial Targets support adherence to Public Law Title 10, Section 2366, which requires major systems and munitions programs to conduct survivability and lethality testing before full-rate production. The Aerial Targets program provides drones to satisfy "Live Fire/Lethality" developmental/operational test requirements. Target drones are used to validate operational missile/weapon system effectiveness and fighter operational flight program (OFP) updates. Target drones are required for developmental/operational testing for all air-to-air and surface-to-air missiles, and for the F-22A, F-35, F-18, F-16, F-15, etc., aircraft. This program element funds development, improvements, and updates of full-scale/subscale aerial targets and target control systems to ensure aerial targets represent enemy threat airborne systems. Specialized target payload subsystems are developed for requirements to include but not limited to missile scoring, electronic attack, electronic countermeasures and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems.

This program is in budget activity 7 - RDT&E Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. It provides aerial targets, target payloads, and target control systems in support of operational and developmental testing.

<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	63.573	50.620	47.169	-	47.169
Current President's Budget	60.574	45.620	50.496	-	50.496
Total Adjustments	-2.999	-5.000	3.327	-	3.327
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-5.000			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-2.999	-	3.327	-	3.327

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**Change Summary Explanation**

FY11 adjustments are Cong General Reductions -\$0.299, Cong Directed Reductions -\$5.0

FY12 adjustments (Cong Directed Reductions -\$5.0)

FY13 funding added for updating Electronic Attack pods critical for testing against foreign representative threats.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Air Force									<b>DATE:</b> February 2012		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0305116F: <i>AERIAL TARGETS</i>				<b>PROJECT</b> 675136: <i>Target Systems Development</i>			
<b>COST (\$ in Millions)</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013 Base</b>	<b>FY 2013 OCO</b>	<b>FY 2013 Total</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675136: <i>Target Systems Development</i>	5.756	6.462	6.945	-	6.945	6.993	5.923	4.393	4.376	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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

Full-scale and subscale targets assure warfighters weapon systems will perform effectively against real-world enemy fighters and cruise missiles. The BQM-167A Air Force Subscale Aerial Target (AFSAT) is a jet powered drone aircraft measuring approximately 20 feet long with a mission to simulate threat aircraft for testing and evaluation of surface-to-air, ship-to-air, or air-to-air missiles. The target accomplishes this mission through the use of optional payloads including chaff and flare, electronic attack, and infrared devices. Funding supports continued improvement of launch phase performance and overall performance enhancement efforts. Funding supports development, improvements, and updates of target control systems and specialized target payload subsystems for requirements to include but not limited to missile scoring, electronic attack and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems.

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

	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
<p><b>Title:</b> BQM-167A Development</p> <p><b>Description:</b> Provide enhancements to the radar cross section and infrared signature with accompanying test and integration. Begin design of an alternate launch system.</p> <p><b>FY 2011 Accomplishments:</b> Start AFSAT product enhancements to include Radar Cross Section (RCS) augmentation.</p> <p><b>FY 2012 Plans:</b> Continue Radar Cross Section (RCS) augmentation, design integration, and test. Start of infrared (IR) augmentation.</p> <p><b>FY 2013 Plans:</b> Continue IR augmentation, start design of Alternate Launch System (ALS).</p>	3.456	1.000	1.000
<p><b>Title:</b> Target Control System</p> <p><b>Description:</b> Provide subsystem modernization enhancements to Target Control System (Gulf Range Drone Control System, GRDCS) for tracking of Aerial Targets.</p> <p><b>FY 2011 Accomplishments:</b> N/A</p> <p><b>FY 2012 Plans:</b></p>	-	5.462	5.945

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305116F: <i>AERIAL TARGETS</i>	<b>PROJECT</b> 675136: <i>Target Systems Development</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2011	FY 2012	FY 2013
Provide subsystem modernization enhancements to Target Control System (Gulf Range Drone Control System, GRDCS) for tracking of Aerial Targets.  <b>FY 2013 Plans:</b> Continue subsystem modernization enhancements to Target Control System for tracking of Aerial Targets.			
<b>Title:</b> Digital Radio Frequency Memory (DRFM)  <b>Description:</b> Upgrade existing and develop new electronic attack (EA) pod hardware and software used on QF-4, QF-16, and subscales to emulate adversary EA tactics and techniques.  <b>FY 2011 Accomplishments:</b> Upgrade existing and develop new electronic attack (EA) pod hardware and software used on QF-4, QF-16, and subscales to emulate adversary EA tactics and techniques.  <b>FY 2012 Plans:</b> N/A  <b>FY 2013 Plans:</b> N/A	2.300	-	-
<b>Accomplishments/Planned Programs Subtotals</b>	5.756	6.462	6.945

<b>C. Other Program Funding Summary (\$ in Millions)</b>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE0305116F, Aerial Targets APAF,...: <i>Aerial Targets</i> <i>Procurement</i>	101.033	74.232	137.834	0.000	137.834	172.578	138.161	147.889	149.203	Continuing	Continuing
• PE0305116F, Aircraft Procurement...: <i>Aircraft</i> <i>Procurement</i>	85.033	59.268	129.866	0.000	129.866	152.889	112.531	131.767	132.821	Continuing	Continuing
• PE0305116F, Initial Spares, APAF...: <i>Initial Spares</i>	0.520	0.468	0.522	0.000	0.522	0.575	0.583	0.579	0.588	Continuing	Continuing
• PE0305116F, Munitions, APAF, BP17: <i>War Consumables</i>	5.282	4.198	2.171	0.000	2.171	5.599	5.318	4.590	4.664	Continuing	Continuing

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• PE0305116F, Electronic Attack Po...: <i>Electronic Attack Pods</i>	10.198	10.298	5.275	0.000	5.275	13.515	19.729	10.953	11.130	Continuing	Continuing
• PE0305116F, Target Control Syste...: <i>Target Control Systems (TCS) Modernization</i>	0.000	0.000	0.795	0.000	0.795	3.892	4.381	3.454	3.423	Continuing	Continuing

**D. Acquisition Strategy**

The AFSAT acquisition strategy is sole source follow-on to a competitive award, with fixed price and time and materials contracts. The Target Control System acquisition strategy is in development; initial work will be accomplished with other government agencies.

**E. Performance Metrics**

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

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305116F: <i>AERIAL TARGETS</i>	<b>PROJECT</b> 675136: <i>Target Systems Development</i>

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305116F: <i>AERIAL TARGETS</i>	<b>PROJECT</b> 675136: <i>Target Systems Development</i>

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305116F: <i>AERIAL TARGETS</i>	<b>PROJECT</b> 675136: <i>Target Systems Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BQM-167A: RCS Enhancement Dev and Test, contractor NAWC/ATSO	4	2011	4	2012
BQM-167A: IEA with Trucker Pod	2	2012	4	2012
BQM-167A: RATO Attach Implementation	1	2012	3	2012
BQM-167A: SIRS Block 3&4 ECP	4	2012	4	2013
BQM-167A: IEA Implementation	1	2013	3	2013
BQM-167A: RCS Implementation	1	2013	4	2013
TCS: TCS Modernization	1	2012	4	2017
TCS: GRDCS Data Link SubSystem - Replacement (DLS-r) Test Set Development	2	2012	4	2013
TCS: Advanced Command Destruct Systems (ACDS) Development	4	2012	2	2015
TCS: AIM-120 GRDCS Transponder Integration	1	2014	4	2014

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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675366: <i>QF-16</i>	54.818	39.158	43.551	-	43.551	22.634	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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

Full-scale targets assure warfighters weapon systems perform effectively against real-world enemy fighters and cruise missiles. Aerial Targets support adherence to Public Law Title 10, Section 2366, which requires major systems and munitions programs to conduct survivability and lethality testing before full-rate production. The Aerial Targets program provides drones to satisfy "Live Fire/Lethality" developmental/operational test requirements. Target drones are used to validate operational missile/weapon system effectiveness and fighter operational flight program (OFP) updates. Target drones are required for developmental/operational testing for all air-to-air and surface-to-air missiles, and for the F-22A, F-35, F-18, F-16, F-15, etc., aircraft. The United States Air Force's (USAF) Air Superiority Modernization/Mission Area Plan has identified aerial targets as a capability shortfall; the QF-16 program will fulfill this requirement. Funding supports continued development of the follow-on full-scale aerial target (QF-16), development, improvements, and updates of target control systems and specialized target payload subsystems for requirements such as: missile scoring, electronic attack and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems. Electronic Attack (EA) pod upgrade provides new techniques and capabilities critical to QF-16s and subscales to realistically emulate foreign threat systems

This program is in budget activity 7 - RDT&E Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. It provides aerial targets, target payloads, and target control systems in support of operational and developmental testing.

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

	FY 2011	FY 2012	FY 2013
<b>Title:</b> QF-16 Development Program	45.415	30.635	16.850
<b>Description:</b> QF-16 Development Program			
<b>FY 2011 Accomplishments:</b> Continued design/development/integration of drone package into F-16; efforts include design/development of drone peculiar equipment, build/install drone hardware prototypes and contractor system test and evaluation.			
<b>FY 2012 Plans:</b> Continued design/development/integration of drone package into F-16; efforts include design/development of drone peculiar equipment, build/install drone hardware prototypes, contractor system test and evaluation, target control system integration and contractor ground and flight testing.			
<b>FY 2013 Plans:</b>			

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
Continued design/development/integration of drone package into F-16; efforts include design/development of drone peculiar equipment, build/install drone hardware prototypes, contractor system test and evaluation, target control system integration and support of government development testing and operational testing (DT/OT).				
<b>Title:</b> F-16 Regeneration <b>Description:</b> F-16 Regeneration <b>FY 2011 Accomplishments:</b> Continued support of F-16 aircraft withdrawal and refurbishment, engine maintenance and refurbishment, acquisition of support equipment, programmatic efforts in support of QF-16 development program . <b>FY 2012 Plans:</b> Continued support of F-16 aircraft withdrawal and refurbishment, engine maintenance and refurbishment, acquisition of support equipment, programmatic efforts in support of QF-16 development program. Beginning of government development and operational testing (DT/OT). <b>FY 2013 Plans:</b> Continued support of F-16 aircraft withdrawal and refurbishment, engine maintenance and refurbishment, acquisition of support equipment, programmatic efforts in support of QF-16 development program. Continuation and completion of Government DT/OT.		9.403	8.523	23.701
<b>Title:</b> Digital Radio Frequency Memory (DRFM) <b>Description:</b> Digital Radio Frequency Memory (DRFM) <b>FY 2011 Accomplishments:</b> N/A <b>FY 2012 Plans:</b> N/A <b>FY 2013 Plans:</b> Upgrade existing and develop new electronic attack (EA) pod hardware and software used on QF-4, QF-16, and subscales to emulate adversary EA tactics and techniques.		-	-	3.000
<b>Accomplishments/Planned Programs Subtotals</b>		54.818	39.158	43.551

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• PE0305116F, Aerial Targets <i>APAF,...: Aerial Targets Procurement</i>	101.053	74.238	137.805	0.000	137.805	172.577	136.560	145.094	146.638	Continuing	Continuing
• PE0305116F, Aircraft <i>Procurement...: Aircraft Procurement</i>	85.033	59.268	129.866	0.000	129.866	152.889	111.126	129.277	130.537	Continuing	Continuing
• PE0305116F, Initial Spares, <i>APAF...: Initial Spares</i>	0.520	0.474	0.493	0.000	0.493	0.575	0.576	0.568	0.578	Continuing	Continuing
• PE0305116F, Munitions, APAF, <i>BP17: War Consumables</i>	5.282	4.198	2.171	0.000	2.171	5.599	5.262	4.503	4.584	Continuing	Continuing
• PE0305116F, Electronic Attack <i>Po...: Electronic Attack Pods</i>	10.218	10.298	5.275	0.000	5.275	13.514	19.596	10.746	10.939	Continuing	Continuing
• PE0305116F, Target Control <i>Syste...: Target Control Systems (TCS) Modernization</i>	0.000	0.000	0.795	0.000	0.795	3.892	4.381	3.454	3.423	Continuing	Continuing

**D. Acquisition Strategy**

The QF-16 acquisition strategy is a fixed price incentive firm, time and materials development contract with fixed price production options.

**E. Performance Metrics**

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

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Critical Design Review (CDR)	2	2011	2	2011
System Verification Review (SVR), Initial	4	2012	4	2012
Milestone B (MS B)	4	2012	4	2012
Development Testing/Operational Testing (DT/OT)	4	2012	3	2013
SVR, Final	3	2013	3	2013
EA Pod Development	1	2013	4	2014