

UNCLASSIFIED

PE NUMBER: 0604429F

PE TITLE: AIRBORNE ELECTRONIC ATTACK

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2005

BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604429F AIRBORNE ELECTRONIC ATTACK

Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	0.000	0.000	120.985	235.450	241.294	177.383	179.553	74.010	Continuing	TBD
5192 Network & Sys -of-Sys Dev	0.000	0.000	12.300	12.300	12.300	12.300	12.300	12.300	Continuing	TBD
5193 B-52 Stand-Off Jammer	0.000	0.000	108.685	223.150	228.994	165.083	167.253	61.710	Continuing	TBD

In FY 2006, this is a new PE. In FY 2006, Project 655192, Network and System-of-Systems Development and Project 655193, B-52 Stand-Off Jammer, efforts were transferred from PE 0604270F, Electronic Warfare Development, Project 658462, Airborne Electronic Attack, in order to continue development of critical electronic attack capabilities.

(U) **A. Mission Description and Budget Item Justification**

This program element develops critical electronic attack capabilities in support of Air Force and joint operations to include the Global Strike and Persistent Global Attack Concepts of Operations (CONOPS). Based on the 2001 Joint Airborne Electronic Attack (AEA) Analysis of Alternatives (AoA) and the follow-on 2002 Joint Suppression of Enemy Air Defenses (Joint SEAD) presentation to OSD(AT&L), the AEA capability will consist of a number of components working together in a joint system of systems. Efforts were initiated under Project 8462 "Airborne Electronic Attack (AEA)" in PE64270, "Electronic Warfare Development", to define and develop the AEA system of systems requirements and architecture. The Navy AEA components are the EA-6B Improved Capability (ICAP) III and EA-18G modified escort platforms. The Air Force is responsible for coordinating AEA system of systems requirements and developing Air Force component capabilities including the B-52 SOJS, the Miniature Air Launched Decoy (MALD) stand-in jammer variant called MALD-J, the EC-130H Compass Call block configuration, Active Electronically Scanned Array (AESA) radar equipped aircraft, and, potentially, the Joint-Unmanned Combat Air Systems (J-UCAS) in an Electronic Attack role. In FY05 (within PE 64270), AEA system of systems engineering/architecture definition was conducted and specific B-52 SOJS risk mitigation studies/engineering analyses and acquisition activities were accomplished. For FY06 and beyond, this new PE includes two projects consisting of transfer of the previous AEA system of systems engineering into Project 655192 "Network and System of Systems Development" and B-52 SOJS into Project 655193 "B-52 Stand Off Jammer" from PE64270. Planned efforts in FY06 and beyond include: Project 5192 - overall systems engineering for the system of systems, architecture development, requirements allocation to component systems, establishment and utilization of virtual test capabilities for system of systems testing/evaluation, and AF Electronic Warfare (EW) investment strategy development and maintenance; Project 5193 - perform studies and mature technologies to a level needed to provide required platform capabilities; and design, document, develop, integrate, test, and install an electronic attack capability that provides high power, wide frequency jamming, high probability of intercept receivers for target detection and geo-location, and battle management functions for reactive jamming suppression of enemy IADS and IADS component radars from stand-off distances, while maintaining B-52 multi-mission offensive and self defense capabilities. This program is included in budget activity 5, System Development and Demonstration, because of the significant development and testing associated with Airborne Electronic Attack.

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(U) B. Program Change Summary (\$ in Millions)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	0.000	0.000	0.000	0.000
(U) Current PBR/President's Budget	0.000	0.000	120.985	235.450
(U) Total Adjustments	0.000	0.000		

(U) Congressional Program Reductions

Congressional Rescissions

Congressional Increases

Reprogrammings

SBIR/STTR Transfer

(U) Significant Program Changes:

Airborne Electronic Attack efforts were transferred in FY2006 from PE 0604270F, EW Development, into this PE.

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Exhibit R-2a, RDT&E Project Justification

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ATTACK

PROJECT NUMBER AND TITLE

5192 Network & Sys -of-Sys Dev

Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5192 Network & Sys -of-Sys Dev	0.000	0.000	12.300	12.300	12.300	12.300	12.300	12.300	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

In FY 2006, Project 655192, Network and System-of-Systems Development , efforts were transferred from PE 0604270F, Electronic Warfare Development, Project 658462, Airborne Electronic Attack.

(U) **A. Mission Description and Budget Item Justification**

This project will concentrate on the overall systems engineering for the AEA system of systems, architecture development, requirements allocation to component systems, establishment and utilization of virtual test capabilities for system of systems testing/evaluation, and AF Electronic Warfare (EW) investment strategy development and maintenance. These efforts were initiated in PE 0604270F, "Electronic Warfare Development," and are crucial in the development of critical electronic attack capabilities in support of Air Force and joint operations to include the Global Strike and Persistent Global Attack Concepts of Operations (CONOPS).

The joint AEA system of systems components include the Navy EA-6B and EA-18G, the B-52 Stand-Off Jammer System (SOJS), the Miniature Air Launched Decoy (MALD) stand-in jammer variant, MALD-J, the EC-130H Compass Call block 35 configuration, Active Electronically Scanned Array (AESA) radar equipped aircraft, and, potentially the Joint-Unmanned Combat Air Systems (J-UCAS) in an Electronic Attack role.

This program is included in budget activity 5, System Development and Demonstration, because of the significant development and testing associated with Airborne Electronic Attack.

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

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) AEA Synchronization Office Support			1.100	1.100
(U) AEA System of systems engineering/architecture development/refine requirements			5.800	5.800
(U) AEA Virtual Test/Modeling & Simulation/EW capability investment strategy			5.400	5.400
(U) Total Cost	0.000	0.000	12.300	12.300

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

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) None										

(U) **D. Acquisition Strategy**

Project 5192 "Network and System of Systems Development" plans to use existing ASC, AFRL, and other contracts and instruments to provide engineering, architecture development, and other support for the system of systems.

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Exhibit R-3, RDT&E Project Cost Analysis

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PROJECT NUMBER AND TITLE

5192 Network & Sys -of-Sys Dev

(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract</u> <u>Method &</u> <u>Type</u>	<u>Performing</u> <u>Activity &</u> <u>Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2004</u> <u>Cost</u>	<u>FY 2004</u> <u>Cost</u>	<u>FY 2004</u> <u>Award</u> <u>Date</u>	<u>FY 2005</u> <u>Cost</u>	<u>FY 2005</u> <u>Award</u> <u>Date</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target</u> <u>Value of</u> <u>Contract</u>
(U) <u>Product Development</u>														
AEA system of systems engineering	MIPR & CPFF	Various						4.750		4.750		Continuing	TBD	
Subtotal Product Development			0.000	0.000		0.000		4.750		4.750		Continuing	TBD	0.000
Remarks:	Includes system of systems engineering; architecture development; network requirements development; EW assessments; working group support; & assistance to engineering, test planning, and milestone preparation													
(U) <u>Support</u>														
AEA requirements support	MIPR	Various						1.050		1.050		Continuing	TBD	
Subtotal Support			0.000	0.000		0.000		1.050		1.050		Continuing	TBD	0.000
Remarks:	Requirements support includes contracted requirements refinement support for ACC and AF/XOR													
(U) <u>Test & Evaluation</u>														
AEA Virtual test/AFEWICS	Various	Various						5.400		5.400		Continuing	TBD	
Subtotal Test & Evaluation			0.000	0.000		0.000		5.400		5.400		Continuing	TBD	0.000
Remarks:	AEA Virtual test element includes modeling and simulation for SoS EW assessments, DoD scenario instantiation & distribution, SoS test planning/rehearsal and supports Air Force Electronic Warfare Capability Investment Strategy (AFEWCIS) roadmap development, maintenance, & assessments													
(U) <u>Management</u>														
ASC/XR (AEA Synch office)	Various	Various						1.100		1.100		Continuing	TBD	
Subtotal Management			0.000	0.000		0.000		1.100		1.100		Continuing	TBD	0.000
Remarks:	Element includes miscellaneous administrative costs incurred in the day-to-day operations by program offices. Costs include travel, office equipment, office supplies, printing, contract services, program management administrative and communications expenses.													
(U) Total Cost			0.000	0.000		0.000		12.300		12.300		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

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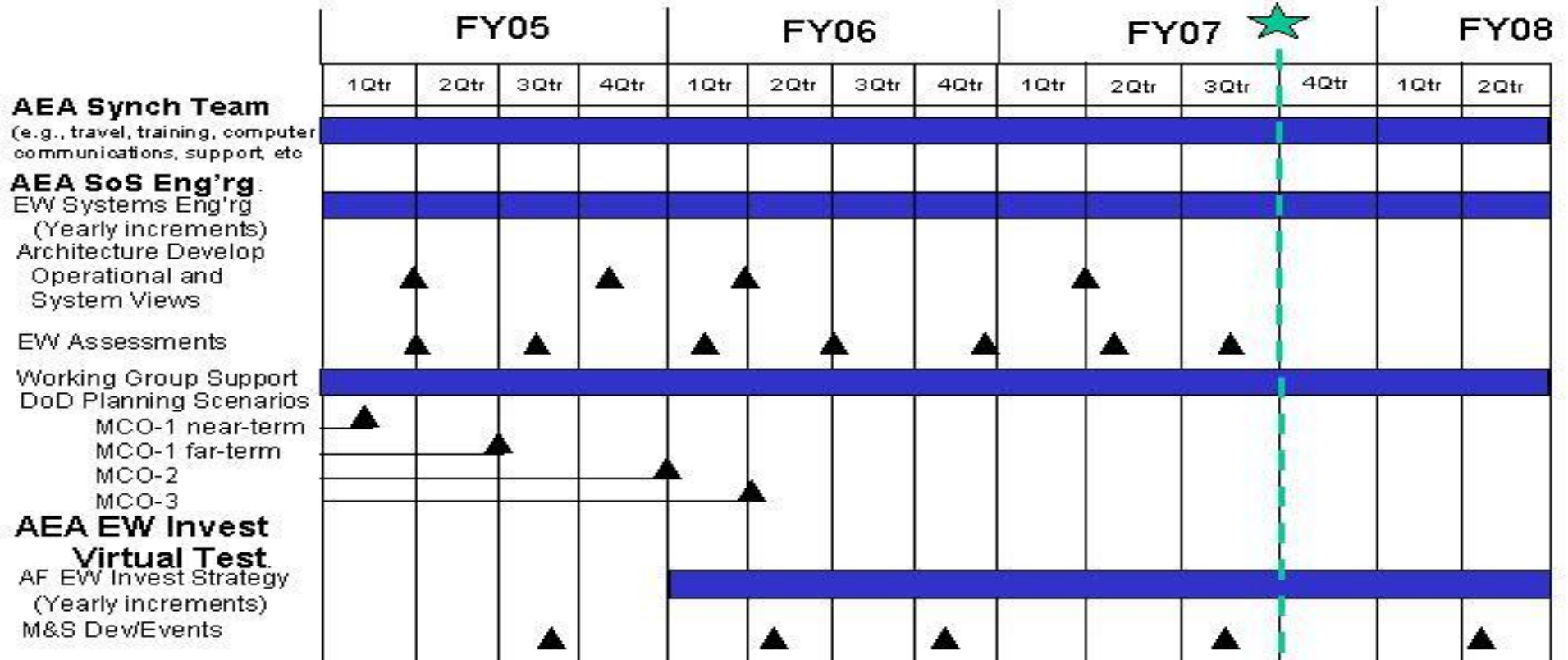
5192 Network & Sys -of-Sys Dev



AEA SoS Synchronization Schedule


Dominant Air Power: Design for Tomorrow... Deliver Today

B-52 SOJS MS B



▲ = Deliveries

1

Project 5192

R-1 Shopping List - Item No. 76-6 of 76-11

Exhibit R-4 (PE 0604429F)

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Exhibit R-4a, RDT&E Schedule Detail						February 2005
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)			PE NUMBER AND TITLE 0604429F AIRBORNE ELECTRONIC ATTACK		PROJECT NUMBER AND TITLE 5192 Network & Sys -of-Sys Dev	
(U) Schedule Profile			FY 2004	FY 2005	FY 2006	FY 2007
(U) AEA System-of-Systems engineering assessment in support of B-52 SOJ MS B						2-3Q

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Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY

05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE

0604429F AIRBORNE ELECTRONIC
ATTACK

PROJECT NUMBER AND TITLE

5193 B-52 Stand-Off Jammer

Cost (\$ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
5193 B-52 Stand-Off Jammer	0.000	0.000	108.685	223.150	228.994	165.083	167.253	61.710	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

In FY 2006, Project 655193, B-52 Stand-Off Jammer, efforts were transferred from PE 0604270F, Electronic Warfare Development, Project 658462, Airborne Electronic Attack.

(U) **A. Mission Description and Budget Item Justification**

The B-52 Stand Off Jammer (SOJ) program will design, document, develop, integrate, test, and install an electronic attack capability that provides high power, wide frequency jamming, high probability of intercept receivers for target detection and geo-location, and battle management functions for reactive jamming suppression of enemy integrated air defense systems (IADS) and IADS component radars from stand-off distances. B-52 multi-mission offensive and self defense capabilities will be maintained. This program will also perform studies and mature technologies to a level needed to provide the above capabilities.

This program is included in budget activity 5, System Development and Demonstration, because of the significant development and testing associated with Airborne Electronic Attack.

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

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) B-52 SOJ Pre-SDD Contract			91.900	165.900
(U) B-52 SOJ SDD Contract				35.000
(U) Low Band Phased Array Tech Demo			6.000	
(U) Mission and Test Support			6.850	16.050
(U) Program Office Support			3.935	6.200
(U) Total Cost	0.000	0.000	108.685	223.150

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

	<u>FY 2004</u> <u>Actual</u>	<u>FY 2005</u> <u>Estimate</u>	<u>FY 2006</u> <u>Estimate</u>	<u>FY 2007</u> <u>Estimate</u>	<u>FY 2008</u> <u>Estimate</u>	<u>FY 2009</u> <u>Estimate</u>	<u>FY 2010</u> <u>Estimate</u>	<u>FY 2011</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) PE 27442F (AEA procurement)					42.079	95.078	82.750	117.864	Continuing	TBD

(U) **D. Acquisition Strategy**

Maturation of low band phased array will be accomplished via AFRL contracts with applicable vendors. Full and open competition for Pre-SDD contract, to be awarded in late FY05, with a lead system integration contractor. SDD contract to be awarded in FY07 will include competition for suppliers of key components.

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Exhibit R-3, RDT&E Project Cost Analysis

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PROJECT NUMBER AND TITLE

5193 B-52 Stand-Off Jammer

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2004 Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) <u>Product Development</u>														
B-52 SOJ Pre-SDD Contract	TBD	TBD						91.900		165.900			257.800	
B-52 SOJ SDD Contract	TBD	TBD								35.000	Jul-07	Continuing	TBD	
Low Band Phased Array Tech Development								6.000					6.000	
Subtotal Product Development			0.000	0.000		0.000		97.900		200.900		Continuing	TBD	0.000
Remarks:														
(U) <u>Support</u>														
SOJ Program Support								3.635		5.800		Continuing	TBD	
Studies and Analysis								3.600		3.550		Continuing	TBD	
Government Furnished Equipment								2.950		12.000		Continuing	TBD	
Subtotal Support			0.000	0.000		0.000		10.185		21.350		Continuing	TBD	0.000
Remarks:		Studies and Analysis includes modeling and simulation												
(U) <u>Test & Evaluation</u>														
Test Support								0.300		0.400		Continuing	TBD	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.300		0.400		Continuing	TBD	0.000
Remarks:		Funds for test planning support from various organizations												
(U) <u>Management</u>														
Management Support								0.300		0.500		Continuing	TBD	
Subtotal Management			0.000	0.000		0.000		0.300		0.500		Continuing	TBD	0.000
Remarks:		Includes support of Acquisition and Sustainment wings at Wright-Patterson AFB and Tinker AFB												
(U) Total Cost			0.000	0.000		0.000		108.685		223.150		Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile

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PROJECT NUMBER AND TITLE

5193 B-52 Stand-Off Jammer



U.S. AIR FORCE

AEA Program Schedule

*Dominant Air Power: Design For Tomorrow... Deliver Today*

FY:	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
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AEA Synchronization Effort



SOJ Milestones:

Concept
Decision

MS B



MS C



FRP

IOC
(6/6)Capabilities
Document

CDD



CPD

SOJ Tech
Demo

Pre-SDD

LEGEND

Program Milestone

Gov't Milestone

SOJ
SDD

SRR SDR PDR CDR MRR DRR

Sys Design/Integration

System Demonstration

CT&E

DT&E/IOT&E

SOJ
PRODUCTION

LL/LRIP Fab

LRIP Install

6 Acft/6 Pod SS

Lot 1 Fab

L1 Install 16/12

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Project 5193

R-1 Shopping List - Item No. 76-10 of 76-11

Exhibit R-4 (PE 0604429F)

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Exhibit R-4a, RDT&E Schedule Detail

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PROJECT NUMBER AND TITLE

5193 B-52 Stand-Off Jammer

(U) Schedule ProfileFY 2004FY 2005FY 2006FY 2007

(U) Pre-SDD Contract Award

4Q

(U) Milestone B

3-4Q