

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603850F: Integrated Broadcast Service (DEM/VAL)							
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	21.020	20.646	20.580	0.000	20.580	20.359	20.464	20.768	21.069	Continuing	Continuing
644778: Integrated Broadcast Service	21.020	20.646	20.580	0.000	20.580	20.359	20.464	20.768	21.069	0.000	0.000

A. Mission Description and Budget Item Justification

The Integrated Broadcast Service (IBS) fulfills the warfighter's requirements for worldwide threat warning and situational awareness information with timely production and simultaneous dissemination of Intelligence, Surveillance, and Reconnaissance (ISR) derived combat information. It also provides target tracking data to support threat avoidance, targeting, force protection, and situational awareness. This information is continually refined in near real time by strategic, operational and tactical sensors. This PE funds IBS system development as described below.

- A Common Interactive Broadcast (CIB) on UHF satellite channel using a Common Message Format (CMF) and a MIL-STD Demand Assigned Multiple Access (DAMA) compliant waveform and Line of Sight (LOS) using the Wideband Networking Waveform (WNW) and Joint Tactical Terminal (JTT).
- IBS-Network Services (IBS-NS) includes two Global IBS Network Servers (GINS) and four Theater Interface Nodes (TINs) to support the geographic Combatant Commanders; all built to validated warfighter requirements.
 - Two GINS that receive data from each theater and integrate this data into a worldwide picture available to all network/broadcast users.
 - Four regional TINs, where out-of-theater (and local) users not directly receiving the broadcast can receive the information broadcast on the CIB. Additionally, the TIN will receive and inject data into the CIB for producers without access to the theater CIB.
- An XML-based Common Message Format (CMF) Data Element Dictionary (DED) that defines IBS messages for broadcast of IBS information over available communications paths including the CIB and other Global Information Grid (GIG) networks.
- A Modular Advanced TRanslation Interchange with XML (MATRIX) Reformatter that provides a modular, platform-independent, multi-use translator to support migration with legacy radios and provide a long term solution for IBS Full Operational Capability (FOC) radio users.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in budget activity 4 because it includes demonstrating and validating the use of technologies to create an operational integrated broadcast service.

UNCLASSIFIED

R-1 Line Item #42

Page 1 of 11

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force				DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE			
3600: Research, Development, Test & Evaluation, Air Force		PE 0603850F: Integrated Broadcast Service (DEM/VAL)			
BA 4: Advanced Component Development & Prototypes (ACD&P)					
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	21.020	20.739	0.000	0.000	0.000
Current President's Budget	21.020	20.646	20.580	0.000	20.580
Total Adjustments	0.000	-0.093	20.580	0.000	20.580
• Congressional General Reductions		0.000			
• 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			
• Other Adjustments	0.000	-0.093	20.580	0.000	20.580

UNCLASSIFIED

R-1 Line Item #42

Page 2 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603850F: <i>Integrated Broadcast Service (DEM/VAL)</i>				PROJECT 644778: <i>Integrated Broadcast Service</i>			
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
644778: <i>Integrated Broadcast Service</i>	21.020	20.646	20.580	0.000	20.580	20.359	20.464	20.768	21.069	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Integrated Broadcast Service (IBS) fulfills the warfighter's requirements for worldwide threat warning and situational awareness information with timely production and simultaneous dissemination of Intelligence, Surveillance, and Reconnaissance (ISR) derived combat information. It also provides target tracking data to support threat avoidance, targeting, force protection, and situational awareness. This information is continually refined in near real time by strategic, operational and tactical sensors. This PE funds IBS system development as described below.

- A Common Interactive Broadcast (CIB) on UHF satellite channel using a Common Message Format (CMF) and a MIL-STD Demand Assigned Multiple Access (DAMA) compliant waveform and Line of Sight (LOS) using the Wideband Networking Waveform (WNW) and Joint Tactical Terminal (JTT).
- IBS-Network Services (IBS-NS) includes two Global IBS Network Servers (GINS) and four Theater Interface Nodes (TINs) to support the geographic Combatant Commanders; all built to validated warfighter requirements.
 - Two GINS that receive data from each theater and integrate this data into a worldwide picture available to all network/broadcast users.
 - Four regional TINs, where out-of-theater (and local) users not directly receiving the broadcast can receive the information broadcast on the CIB. Additionally, the TIN will receive and inject data into the CIB for producers without access to the theater CIB.
- An XML-based Common Message Format (CMF) Data Element Dictionary (DED) that defines IBS messages for broadcast of IBS information over available communications paths including the CIB and other Global Information Grid (GIG) networks.
- A Modular Advanced TRanslation Interchange with XML (MATRIX) Reformatter that provides a modular, platform-independent, multi-use translator to support migration with legacy radios and provide a long term solution for IBS Full Operational Capability (FOC) radio users.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in budget activity 4 because it includes demonstrating and validating the use of technologies to create an operational integrated broadcast service.

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

UNCLASSIFIED

R-1 Line Item #42

Page 3 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603850F: Integrated Broadcast Service (DEM/VAL)		PROJECT 644778: Integrated Broadcast Service		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Continue systems engineering and development of architectures. FY 2009 Accomplishments: In FY2009: Continue systems engineering, including development of architectures, system of systems management through the Joint Broadcast Configuration Control Board (JBCCB), and risk reduction studies using Simulation Based Acquisition (SBA) tools FY 2010 Plans: In FY2010: Continue systems engineering, including development of architectures, system of systems management through the Joint Broadcast Configuration Control Board (JBCCB), and risk reduction studies using Simulation Based Acquisition (SBA) tools FY 2011 Base Plans: In FY2011: Continue systems engineering, including development of architectures, system of systems management through the Joint Broadcast Configuration Control Board (JBCCB), and risk reduction studies using Simulation Based Acquisition (SBA) tools FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.		1.115	1.906	1.773	0.000	1.773
MAJOR THRUST: Continue the Phase II/System Development and Demonstration of the GINS and TINs FY 2009 Accomplishments: In FY2009: Continue the Phase II/System Development and Demonstration of the GINS and TINs FY 2010 Plans: In FY2010: Continue the Phase II/System Development and Demonstration of the GINS and TINs FY 2011 Base Plans: In FY2011: Continue the Phase II/System Development and Demonstration of the GINS and TINs		14.912	14.346	14.572	0.000	14.572

UNCLASSIFIED

R-1 Line Item #42

Page 4 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603850F: Integrated Broadcast Service (DEM/VAL)		PROJECT 644778: Integrated Broadcast Service		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Continue Test & Evaluation FY 2009 Accomplishments: In FY2009: Continue Test & Evaluation FY 2010 Plans: In FY2010: Continue Test & Evaluation FY 2011 Base Plans: In FY2011: Continue Test & Evaluation FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.		1.264	1.552	1.602	0.000	1.602
MAJOR THRUST: Maintain a Program Management Office, including program supervision, finance and acquisition strategy execution FY 2009 Accomplishments: In FY2009: Maintain a Program Management Office, including program supervision, finance and acquisition strategy execution FY 2010 Plans: In FY2010: Maintain a Program Management Office, including program supervision, finance and acquisition strategy execution		1.912	2.142	1.933	0.000	1.933

UNCLASSIFIED

R-1 Line Item #42

Page 5 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603850F: Integrated Broadcast Service (DEM/VAL)		PROJECT 644778: Integrated Broadcast Service		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: In FY2011: Maintain a Program Management Office, including program supervision, finance and acquisition strategy execution						
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Joint Tactical Radio System (JTRS) Modular Advanced TRanslation and Interchange with XML (MATRIX) Reformatter		1.220	0.000	0.000	0.000	0.000
FY 2009 Accomplishments: In FY2009: Joint Tactical Radio System (JTRS) Modular Advanced TRanslation and Interchange with XML (MATRIX) Reformatter						
FY 2010 Plans: In FY2010: N/A						
FY 2011 Base Plans: In FY2011: N/A						
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.						
MAJOR THRUST: Enterprise Systems Engineering/CMF Integration/CIB Integration		0.597	0.700	0.700	0.000	0.700
FY 2009 Accomplishments: In FY2009: Enterprise Systems Engineering/CMF Integration/CIB Integration						
FY 2010 Plans: In FY2010: Enterprise Systems Engineering/CMF Integration/CIB Integration						

UNCLASSIFIED

R-1 Line Item #42

Page 6 of 11

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603850F: Integrated Broadcast Service (DEM/VAL)				PROJECT 644778: Integrated Broadcast Service			
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2011 Base Plans: In FY2011: Enterprise Systems Engineering/CMF Integration/CIB Integration											
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.											
Accomplishments/Planned Programs Subtotals						21.020	20.646	20.580	0.000	20.580	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0305179F: Integrated Broadcast Service (OPAF)	19.526	12.434	12.612	0.000	12.612	12.872	13.114	13.307	13.524	0.000	0.000
• PE 0305179F (1): Integrated Broadcast Service (O&M)	18.688	12.566	18.535	0.000	18.535	20.089	20.268	20.577	21.340	0.000	0.000
D. Acquisition Strategy											
IBS used an evolutionary acquisition approach with a Program Definition/Risk Reduction phase (Spiral 1), followed by a full and open competition award to BTG/Titan/L-3Comm to complete the Engineering, Manufacturing and Development (EMD) phase (Spiral 2-4).											
MATRIX used an initial requirements definition phase followed by evolutionary acquisition approach for development by means of a sole-source contract award to L3-Comm IS.											
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.											

UNCLASSIFIED

R-1 Line Item #42

Page 7 of 11

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603850F: <i>Integrated Broadcast Service (DEM/VAL)</i>				PROJECT 644778: <i>Integrated Broadcast Service</i>					
Product Development (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Phase 2 Spiral 2 - 4	C/CPAF	BTG, Inc./Titan/ L-3 Comm Reston, VA	14.912	14.346	Nov 2009	14.572	Nov 2010	0.000		14.572	Continuing	Continuing	Continuing
JTRS MATRIX Reformatter	C/FFP	L-3 Comm, ISD Greenville, TX	1.220	0.000		0.000		0.000		0.000	0.000	1.220	7.992
Subtotal			16.132	14.346		14.572		0.000		14.572			
Remarks													
Test and Evaluation (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Interoperability and Developmental Testing	MIPR	JITC Ft Huachuca, AZ & 46th OSS: Eglin AFB, FL	1.264	1.552	Jan 2010	1.602	Jan 2011	0.000		1.602	Continuing	Continuing	Continuing
Subtotal			1.264	1.552		1.602		0.000		1.602			
Remarks													

UNCLASSIFIED

R-1 Line Item #42

Page 8 of 11

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force											DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603850F: <i>Integrated Broadcast Service (DEM/VAL)</i>					PROJECT 644778: <i>Integrated Broadcast Service</i>				
Management Services (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
SPO/Professional Acquisition Support Services (PASS), Engineering and Technical Acquisition Support Service (ETASS), Specialized Cost Service (SCS)	Various/ Various	Local Area (Bedford, MA)/ Washington DC Area	1.912	2.142	Jan 2010	1.933	Jan 2011	0.000		1.933	Continuing	Continuing	Continuing	
MITRE	SS/CPFF	Mgt Bedford, MA	1.115	1.906	Oct 2009	1.773	Oct 2010	0.000		1.773	Continuing	Continuing	Continuing	
Enterprise Engineering/ CMF Integration/CIB Integration	SS/CPFF	L-3 Comm, IS Greenville, TX	0.597	0.700	Mar 2010	0.700	Mar 2011	0.000		0.700	Continuing	Continuing	Continuing	
Subtotal			3.624	4.748		4.406		0.000		4.406				
Remarks														
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			21.020	20.646		20.580		0.000		20.580				
Remarks Total Prior Years Cost may include only FY 2009 data.														

UNCLASSIFIED

R-1 Line Item #42

Page 9 of 11

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

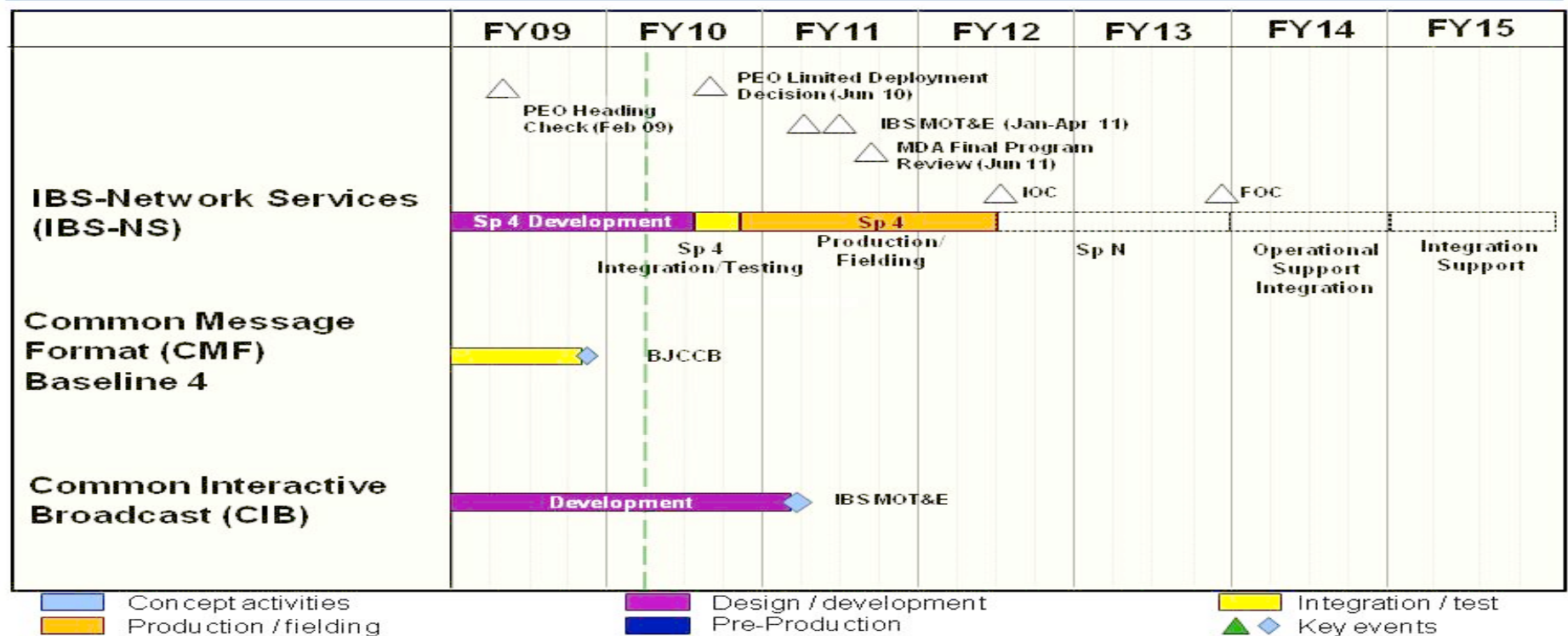
PE 0603850F: Integrated Broadcast Service
(DEM/VAL)

PROJECT

644778: Integrated Broadcast Service



IBS Broadcast Segment Schedule



UNCLASSIFIED

R-1 Line Item #42

Page 10 of 11

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603850F: <i>Integrated Broadcast Service (DEM/VAL)</i>	PROJECT 644778: <i>Integrated Broadcast Service</i>	

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
IBS-NS Development	1	2009	3	2010
IBS-NS Integration/Test	3	2010	4	2010
IBS-NS PEO Heading Check	2	2009	2	2009
CMF BJCCB Configuration Control	4	2009	4	2009
CIB Development/Test	1	2009	1	2011
PEO Limited Deployment Decision	3	2010	3	2010
MDA Final Program Review	3	2011	3	2011

UNCLASSIFIED