

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>February 2005</b>
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BUDGET ACTIVITY <b>03 Advanced Technology Development (ATD)</b>	PE NUMBER AND TITLE <b>0603850F Integrated Broadcast Service (DEM/VAL)</b>
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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	8.241	2.268	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5151 Blue Force Tracking	8.241	2.268	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

In FY2004, Project Number 635151, Joint Blue Force Situation Awareness (JBFSA) Advanced Concept Technology Demonstration (ACTD), efforts were transferred from PE0207028F, Joint Expeditionary Force Experiment (JEFX), Project Number 674991, Joint Distributed Engineering Plant. Although this PE is entitled "Integrated Broadcast Service (IBS)", this project does not use IBS funding. Description of the IBS program is provided in PE 63850F, Budget Activity 4.

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

Joint Blue Force Situational Awareness (JBFSA) Objectives - Provide, through a collection of systems, a globally responsive Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capability to detect, track, identify and assess all adversary, neutral and friendly (e.g., US, Joint, and Coalition) forces in the assigned areas of responsibility (AORs); increase combat effectiveness by improving air-to-ground time sensitive targeting (TST) and blue force situational awareness to ensure prosecution of the right targets and the reduction of fratricide.

JBFSA ACTD - This JBFSA ACTD, a continuation of an ACTD started in CY2003, will focus on the integration of disparate systems (no single system or mission application exists today), data interoperability and common operating displays. Tasks include the development, integration, validation, and transition of web-enabled Common Operating Picture (COP) and User Defined Operating Picture (UDOP) capabilities for Joint Blue Force Tracking. Specific sub-areas include the integration of current JBFSA devices into the JBFSA architecture, disseminate and display a consistent blue force picture within the Global Command and Control Systems (GCCS) family of systems (FOS) COP and select tactical level display devices, identification of additional JBFSA data dissemination paths (satellite communications (SATCOM), Global Broadcast Service (GBS), Integrated Broadcast Service (IBS), Tactical networks, etc.), integration of line-of-sight (LOS) receivers into the JBFSA architecture including aircraft, unmanned aerial vehicles (UAVs) and aerostats, field an enhanced Mission Management Center (MMC) capability, and serve as the benchmark/set the stage to evaluate multi-level security challenges and the dissemination of select JBFSA data to Coalition COP devices. All candidate solutions will be validated before transitioning to the services for sustainment and extended user evaluation.

Family of Interoperable Operational Pictures (FIOP) - FIOP is a program designed to implement web-based technologies into Systems of Record, making their data and thus the Common operational and tactical pictures consistent throughout the Services and at all echelons of Combat Operations. The Joint Requirements Oversight Council (JROC) directed "...provide an all source picture of the Battlespace containing actionable decision quality information through the fusion of existing databases" in JROC Memorandum 156-02. Ultimately, the efforts described herein will lead to the underpinnings of Network Centric Operational Warfare. Per OSD Budget Decision, FIOP, PE 0207443F Project # 675137 is terminated for FY06-11.

FIOP JBFSA - Many DoD systems provide data regarding friendly forces. There is no single system or mission application that provides a totally integrated (i.e. all blue force data) set of data to the warfighter. This task will perform the systems engineering, architecture development and integration activities leading to a secure, web-based blue force data dissemination network service. This task is being led by the Army and is being done in coordination with the Blue Force Tracking and Single Integrated Ground Picture (SIGP) programs and the JBFSA ACTD. Note: Per OSD Budget Decision, the SIGP program is also cancelled for FY06-11.

This program is in Budget Activity 3, Advanced Technology Development, since it develops and demonstrates technologies for existing systems.

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BUDGET ACTIVITY

03 Advanced Technology Development (ATD)

PE NUMBER AND TITLE

0603850F Integrated Broadcast Service (DEM/VAL)

(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	8.464	2.294	0.000	0.000
(U) Current PBR/President's Budget	8.241	2.268	0.000	0.000
(U) Total Adjustments	-0.223	-0.026		
(U) Congressional Program Reductions				
Congressional Rescissions		-0.026		
Congressional Increases				
Reprogrammings	-0.223			
SBIR/STTR Transfer				
(U) <u>Significant Program Changes:</u>				
Not Applicable.				

## Exhibit R-2a, RDT&amp;E Project Justification

DATE

February 2005

BUDGET ACTIVITY <b>03 Advanced Technology Development (ATD)</b>				PE NUMBER AND TITLE <b>0603850F Integrated Broadcast Service (DEM/VAL)</b>			PROJECT NUMBER AND TITLE <b>5151 Blue Force Tracking</b>			
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
5151 Blue Force Tracking	8.241	2.268	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

In FY2004, Project Number 635151, Joint Blue Force Situation Awareness (JBFSA) Advanced Concepts Technology Demonstration (ACTD), efforts were transferred from PE0207028F, Joint Expeditionary Force Experiment (JEFX), Project Number 674991, Joint Distributed Engineering Plant. Although this PE is entitled "Integrated Broadcast Service (IBS)", this project does not use IBS funding. Description of the IBS program is provided in PE 63850F, Budget Activity 4.

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

Joint Blue Force Situational Awareness (JBFSA) Objectives - Provide, through a collection of systems, a globally responsive Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capability to detect, track, identify and assess all adversary, neutral and friendly (e.g., US, Joint, and Coalition) forces in the assigned areas of responsibility (AORs); increase combat effectiveness by improving air-to-ground time sensitive targeting (TST) and blue force situational awareness to ensure prosecution of the right targets and the reduction of fratricide.

JBFSA ACTD - This JBFSA ACTD, a continuation of an ACTD started in CY2003, will focus on the integration of disparate systems (no single system or mission application exists today), data interoperability and common operating displays. Tasks include the development, integration, validation, and transition of web-enabled Common Operating Picture (COP) and User Defined Operating Picture (UDOP) capabilities for Joint Blue Force Tracking. Specific sub-areas include the integration of current JBFSA devices into the JBFSA architecture, disseminate and display a consistent blue force picture within the Global Command and Control Systems (GCCS) family of systems (FOS) COP and select tactical level display devices, identification of additional JBFSA data dissemination paths (satellite communications (SATCOM), Global Broadcast Service (GBS), Integrated Broadcast Service (IBS), Tactical networks, etc.), integration of line-of-sight (LOS) receivers into the JBFSA architecture including aircraft, unmanned aerial vehicles (UAVs) and aerostats, field an enhanced Mission Management Center (MMC) capability, and serve as the benchmark/set the stage to evaluate multi-level security challenges and the dissemination of select JBFSA data to Coalition COP devices. All candidate solutions will be validated before transitioning to the services for sustainment and extended user evaluation.

Family of Interoperable Operational Pictures (FIOP) - FIOP is a program designed to implement web-based technologies into Systems of Record, making their data and thus the Common operational and tactical pictures consistent throughout the Services and at all echelons of Combat Operations. The Joint Requirements Oversight Council (JROC) directed "...provide an all source picture of the Battlespace containing actionable decision quality information through the fusion of existing databases" in JROC Memorandum 156-02. Ultimately, the efforts described herein will lead to the underpinnings of Network Centric Operational Warfare. Per OSD Budget Decision, FIOP, PE 0207443F Project # 675137 is terminated for FY06-11.

FIOP JBFSA - Many DoD systems provide data regarding friendly forces. There is no single system or mission application that provides a totally integrated (i.e. all blue force data) set of data to the warfighter. This task will perform the systems engineering, architecture development and integration activities leading to a secure, web-based blue force data dissemination network service. This task is being led by the Army and is being done in coordination with the Blue Force Tracking and Single Integrated Ground Picture (SIGP) programs and the JBFSA ACTD. Note: Per OSD Budget Decision, the SIGP program is also cancelled for FY06-11.

**Exhibit R-2a, RDT&E Project Justification**

DATE

**February 2005**

<b>BUDGET ACTIVITY</b> <b>03 Advanced Technology Development (ATD)</b>	<b>PE NUMBER AND TITLE</b> <b>0603850F Integrated Broadcast Service (DEM/VAL)</b>	<b>PROJECT NUMBER AND TITLE</b> <b>5151 Blue Force Tracking</b>
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(U) Demonstration/Exercise Support		0.556		
(U) CONOPS/Tactics, Techniques, and Procedures (TTP) & Documentation Development	0.180	0.262		
(U) Purchase/Lease and Installation of BFT Devices, Training, and Purchase of SATCOM air time	0.500			
(U) Transition Support		0.780		
(U) Maintain a Program Management Office, including financial and demonstration supervision	0.230	0.074		
(U) FIOP JBFSAs Integrated Architecture Development and Interoperability enhancements	5.636	0.000		
(U) Total Cost	8.241	2.268	0.000	0.000

**(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) Not Applicable										

**(U) D. Acquisition Strategy**

The Acquisition Strategy for this effort will be to use existing precompeted contracts and add task/delivery orders to them.

**UNCLASSIFIED**

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

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>February 2005</b>
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<b>BUDGET ACTIVITY</b> <b>04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603850F Integrated Broadcast Service (DEM/VAL)</b>
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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	15.980	23.653	15.344	20.026	21.016	21.113	21.324	21.505	Continuing	TBD
4778 Integrated Broadcast Service	15.980	23.653	15.344	20.026	21.016	21.113	21.324	21.505	Continuing	TBD

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

The Integrated Broadcast Service (IBS) fulfills the warfighter's requirements for threat warning and situational awareness information with timely dissemination of intelligence and information. It also provides target tracking data to support threat avoidance, targeting, force protection, and situational awareness. This information is continually refined by data provided by strategic, operational and tactical sensors. IBS includes a Global IBS Network Server (GINS), an alternate GINS, and four (4) Theater Interface Nodes (TINs) to support the geographic Combatant Commanders; all built to validated warfighter requirements. This request funds the IBS system as described above, which includes spiral development of:

- A Common Interactive Broadcast (CIB) on Ultra High Frequency (UHF) satellite communications a military standard Demand Assigned Multiple Access (DAMA) compliant waveform and a Line of Sight (LOS) broadcast using the Wideband Networking Waveform (WNW) and Joint Tactical Radio System (JTRS).
- A centralized GINS that receives data from each theater and then integrates this data into a worldwide picture available to all network-connected users.
- A regional TIN, 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.
- A Common Message Format (CMF) for broadcasting IBS information over available communications paths including the CIB and other Global Information Grid (GIG) networks.

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

**(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	16.229	23.927	20.155	20.814
(U) Current PBR/President's Budget	15.980	23.653	15.344	20.026
(U) Total Adjustments	-0.249	-0.274		
(U) Congressional Program Reductions				
Congressional Rescissions		-0.274		
Congressional Increases				
Reprogrammings	-0.249			
SBIR/STTR Transfer				
(U) <u>Significant Program Changes:</u>				
(N/A)				

## Exhibit R-2a, RDT&amp;E Project Justification

DATE

February 2005

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT NUMBER AND TITLE		
<b>04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603850F Integrated Broadcast Service (DEM/VAL)</b>						<b>4778 Integrated Broadcast Service</b>		
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
4778 Integrated Broadcast Service	15.980	23.653	15.344	20.026	21.016	21.113	21.324	21.505	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

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

The Integrated Broadcast Service (IBS) fulfills the warfighter's requirements for threat warning and situational awareness information with timely dissemination of intelligence and information. It also provides target tracking data to support threat avoidance, targeting, force protection, and situational awareness. This information is continually refined by data provided by strategic, operational and tactical sensors. IBS includes a Global IBS Network Server (GINS), an alternate GINS, and four (4) Theater Interface Nodes (TINs) to support the geographic Combatant Commanders; all built to validated warfighter requirements. This request funds the IBS system as described above, which includes spiral development of:

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- A Common Message Format (CMF) for broadcasting IBS information over available communications paths including the CIB and other Global Information Grid (GIG) networks.

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

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

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) 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.	1.654	1.427	1.700	1.700
(U) Continue the Phase II/Engineering, Manufacturing, and Development of the GINS and TINs	6.124	15.801	8.644	12.426
(U) Continue Common Message Format (CMF) development	1.725	1.025	1.025	1.025
(U) Satellite Communications (SATCOM) Broadcast Waveform Development (DISA/SPAWAR)	2.450	0.750	1.200	0.700
(U) Joint Tactical Radio System (JTRS) Modular Advanced TRanslation and Interchange with XML (MATRIX) Reformatter	1.400	1.800	0.000	1.400
(U) Continue Test & Evaluation	1.027	1.000	0.925	0.925
(U) Maintain a Program Management Office, including program supervision, finance and acquisition strategy execution.	1.600	1.850	1.850	1.850
(U) Total Cost	15.980	23.653	15.344	20.026

Exhibit R-2a, RDT&E Project Justification

DATE

February 2005

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603850F Integrated Broadcast Service (DEM/VAL)

PROJECT NUMBER AND TITLE

4778 Integrated Broadcast Service

(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) OPAF/PE0305179F	7.178	11.600	11.200	11.900	12.300	12.600	12.800	13.000	Continuing	TBD
(U) O&M/PE0305179F	18.221	15.430	11.700	12.500	13.200	13.100	13.400	13.500	Continuing	TBD

(U) **D. Acquisition Strategy**

IBS uses an evolutionary acquisition approach with a Program Definition/Risk Reduction phase (Spiral 1), followed by Engineering, Manufacturing, and Development (EMD) phase (Spiral 2-4), with full and open competition.

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Exhibit R-3, RDT&E Project Cost Analysis												DATE <b>February 2005</b>		
BUDGET ACTIVITY <b>04 Advanced Component Development and Prototypes (ACD&amp;P)</b>						PE NUMBER AND TITLE <b>0603850F Integrated Broadcast Service (DEM/VAL)</b>					PROJECT NUMBER AND TITLE <b>4778 Integrated Broadcast Service</b>			
<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior to FY 2004 Cost</u>	<u>FY 2004 Cost</u>	<u>FY 2004 Award Date</u>	<u>FY 2005 Cost</u>	<u>FY 2005 Award Date</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Product Development</u>														
Spiral I	C/FFP	Lockheed Martin (Gaithersburg, MD)	2.000									0.000	2.000	TBD
Spiral I	C/FFP	BTG, Inc. (Fairfax, VA)	2.000									0.000	2.000	TBD
Spiral I	C/FFP	TRW, Inc. (Fairfax, VA)	2.000									0.000	2.000	TBD
Spiral II	C/CPAF	BTG, Inc./Titan (Fairfax, VA)	43.708	6.124	Dec-03	15.801	Dec-04	8.644	Dec-05	12.426	Dec-06	Continuing	TBD	TBD
CMF Development	C/FFP	Raytheon E-Systems/L3Comm (Greenville, TX)	4.278									0.000	4.278	TBD
CMF Development	C/FFP	SAIC (Columbia, MD)	1.120	1.725	Feb-04	1.025	Dec-04	1.025	Dec-05	1.025	Dec-06	Continuing	TBD	TBD
SATCOM Broadcast Waveform Development	MIPR	Arlington, VA (Defense Information Systems Agency)		1.200	May-04			1.200	Feb-06	0.700	Feb-07	0.000	3.100	TBD
SATCOM Broadcast Waveform Development	MIPR	San Diego, CA (SPAWAR Systems)		1.250	May-04	0.750	Dec-04						2.000	TBD
JTRS MATRX Reformatter	C/FFP	L-3 Comm (Greenville, TX)		1.400	May-04	1.800	Mar-05			1.400	Dec-06	0.000	4.600	TBD
Subtotal Product Development			55.106	11.699		19.376		10.869		15.551		Continuing	TBD	TBD
Remarks:														
<u>(U) Support</u>													0.000	TBD
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	TBD
Remarks:														
<u>(U) Test &amp; Evaluation</u>														
Interoperability and Developmental Testing	MIPR/Proj	JITC (Ft	0.980	1.027	Dec-03	1.000	Dec-04	0.925	Dec-05	0.925	Dec-06	Continuing	TBD	TBD
Project 4778														



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**Exhibit R-3, RDT&E Project Cost Analysis**

DATE

**February 2005**

BUDGET ACTIVITY		PE NUMBER AND TITLE				PROJECT NUMBER AND TITLE								
<b>04 Advanced Component Development and Prototypes (ACD&amp;P)</b>		<b>0603850F Integrated Broadcast Service (DEM/VAL)</b>				<b>4778 Integrated Broadcast Service</b>								
	ect Order	Huachuca, AZ) & 46th OSS (Eglin AFB, FL)												
	Subtotal Test & Evaluation		0.980	1.027	1.000	0.925	0.925	Continuing	TBD	TBD				
	Remarks:													
(U)	<u>Management</u>													
	SPO/ITSP	Various												
		Local Area (Bedford, MA)/Washington DC Area	0.798	1.600	Mar-04	1.850	Mar-05	1.850	Mar-06	1.850	Mar-07	Continuing	TBD	TBD
	MITRE	SS/CPFF (FFRDC)	9.882	1.654	Dec-03	1.427	Oct-04	1.700	Oct-05	1.700	Oct-06	Continuing	TBD	TBD
	Subtotal Management		10.680	3.254		3.277		3.550		3.550		Continuing	TBD	TBD
	Remarks:													
(U)	Total Cost		66.766	15.980		23.653		15.344		20.026		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE

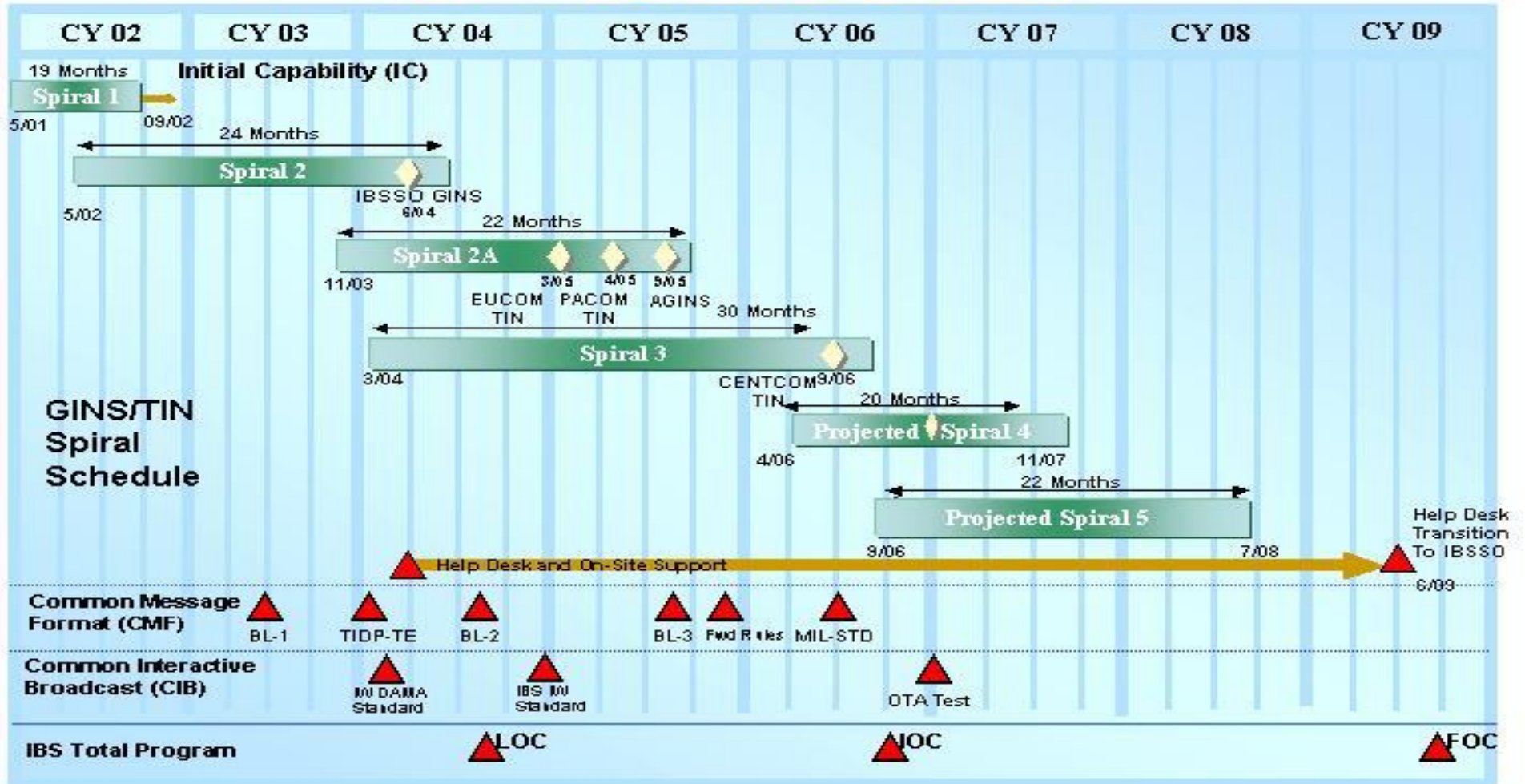
February 2005

BUDGET ACTIVITY  
04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE  
0603850F Integrated Broadcast Service (DEM/VAL)

PROJECT NUMBER AND TITLE  
4778 Integrated Broadcast Service

# IBS Program Schedule



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<b>Exhibit R-4a, RDT&amp;E Schedule Detail</b>	DATE <b>February 2005</b>
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<b>BUDGET ACTIVITY</b> <b>04 Advanced Component Development and Prototypes (ACD&amp;P)</b>	<b>PE NUMBER AND TITLE</b> <b>0603850F Integrated Broadcast Service (DEM/VAL)</b>	<b>PROJECT NUMBER AND TITLE</b> <b>4778 Integrated Broadcast Service</b>
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<b>(U) <u>Schedule Profile</u></b>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Spiral II Integration Test	1Q			
(U) Spiral II LOC (Limited Operational Capability)	3Q			
(U) Spiral IIa European Command (EUCOM) Factory Acceptance Test (FAT)	4Q			
(U) Spiral IIa IBS Support Office (IBSSO) Partial FAT		1Q		
(U) Spiral IIa Pacific Command (PACOM) FAT		1Q		
(U) Spiral IIa EUCOM Site Acceptance Test (SAT)		2Q		
(U) Spiral IIa Alternate GINS (AGINS) FAT		3Q		
(U) Spiral IIa PACOM SAT		3Q		
(U) Spiral IIa AGINS SAT		4Q		
(U) Spiral III Preliminary Design Review		1Q		
(U) Spiral III Final Design Review		3Q		
(U) Spiral III Site Survey		2Q		
(U) Spiral III Integration and Test			1Q	
(U) Spiral III Site Integration Test (SIT)			2Q	
(U) Spiral III TINs Factory Acceptance Test			3Q	
(U) Spiral III Initial Operational Capability (IOC)			4Q	
(U) Spiral IV System Requirements Review			2Q	
(U) Spiral IV Preliminary Design Review			3Q	
(U) Global Interoperability Test			4Q	