#### PE NUMBER: 0207443F PE TITLE: FAMILY OF INTEROP OPERATIONAL PIC (FIOP)

SUDGET ACTIVITY	it R-2, RDI	&E Budge	t Item Just	ification			DATE	February	2004
5 System Development and Demonstrati	ion (SDD)			E NUMBER AND 207443F FAN	TITLE AILY OF INTE	ROP OPERA	TIONAL PIC	•	
Cost (\$ in Millions)	Cost (\$ in Millions)FY 2003FY 2004FY 2005FY 2006FY 2007FY 2008FY EstimateActualEstimateEstimateEstimateEstimateEstimateEstimate								Total
Total Program Element (PE) Cost	Actual 0.000	Estimate 0.000	Estimate 44.947			Estimate 51.720	Estimate 40.521	Complete 0.000	0.0
5137 Family of Interoperable Operational Pictures (FIOP)	0.000	0.000	44.947	45.201 45.201	41.438 41.438	51.720	40.531 40.531	0.000	0.0
<ul> <li>For FY03 Task 1 program details, see PE 02074 Management C4I, Project #654790. For FY04 T Service, #635151.</li> <li>U) <u>A. Mission Description and Budget Item</u> The Family of Interoperable Operational P the Common Operational and Tactical Pict (JROC) directed the FIOP program to "p</li> </ul>	ask 2 program <b>Justification</b> Victures (FIOP) tures, consistent provide an all-sc	details, see PE is a program de t throughout the purce picture of	0604754F, Tac esigned to impl e Services and	ement web-bas at all echelons	k Integration, P sed technologie of Combat Ope	roject #654992 s into Systems erations. The Jo	and PE 06038 of Record, ma pint Requirement	50F, Integrated king their data, a ents Oversight C	and thus Council
databases" in JROC Memorandum 156-02.	. Utimatery, th	e FIOP effort	will lead to the	-					-
includes the following areas: Joint Blue Force Situational Awareness (JI provides a totally integrated (i.e. all blue for activities leading to a secure, web-based bl Force Tracking and Single Integrated Grou Situational Awareness Data Interoperabilit	BFSA) - Many pree data) set of lue force data d and Picture prog ty - This task with	DoD systems p data to the wa issemination ne grams and the J ill allow the bio	provide data reg rfighter. This t etwork service. foint Blue Force directional shar	underpinnings arding friendly ask will perfor This task is b e Situational A ing of data wit	of Network Ce y forces. There m the systems eing led by the wareness Adva h our coalition	ntric Operation is no single system engineering, are Army and is be nced Concept	al Warfare. T stem or missio chitecture deve sing done in co Fechnology De h the developr	he FIOP program n application the elopment, and ir pordination with emonstration.	m focus at ntegration the Blue
includes the following areas: Joint Blue Force Situational Awareness (JI provides a totally integrated (i.e. all blue for activities leading to a secure, web-based bl Force Tracking and Single Integrated Grou	BFSA) - Many orce data) set of lue force data d and Picture prog ty - This task with t, web-based not lack of integrate amily of Syster segment, which effort is to expan	DoD systems p data to the wa issemination ne grams and the J ill allow the bio etwork gateway tion between th ns (FoS) of the h provides the a and and strengt	provide data reg rfighter. This t etwork service. Joint Blue Force directional shar y mission appli- me multi-Tactica b Joint Planning ability to establ hen this integra	underpinnings arding friendly ask will perfor This task is b e Situational A ing of data wit cation and dev al Data Link (T Network (JPN ish two-way ir ation, with a fo	of Network Ce y forces. There im the systems eing led by the wareness Adva h our coalition elopment of an YADIL) network N. The evolvin interfaces betwee cus on near-ter	ntric Operation is no single sys engineering, are Army and is be nced Concept 7 partners throug Interface Contr ts of the Joint I g primary mecl en GCCS FoS a m delivery of w	al Warfare. T stem or missio chitecture deve ing done in co Fechnology De h the developr rol Document. Data Network ( hanism for sup and Link 11/16 varfighting cap	he FIOP program n application the elopment, and in pordination with emonstration. (JDN) and the G porting this type is (via the Air De pability, but is	m focus at ntegration the Blue non Global e of efense
<ul> <li>includes the following areas:</li> <li>Joint Blue Force Situational Awareness (JI provides a totally integrated (i.e. all blue for activities leading to a secure, web-based bl Force Tracking and Single Integrated Grout Situational Awareness Data Interoperabilitt Operational Environment (COE)-compliant</li> <li>Tactical Data Link Integration - There is a Command and Control Systems (GCCS) F integration is the Multi-TADIL Capability Systems Integrator). The objective of this</li> </ul>	BFSA) - Many orce data) set of lue force data d and Picture prog ty - This task with t, web-based not lack of integrate amily of Syster segment, which effort is to expan	DoD systems p data to the wa issemination ne grams and the J ill allow the bid etwork gateway ion between th ns (FoS) of the h provides the a and and strengt on to architectu	provide data reg rfighter. This t etwork service. Joint Blue Force directional shar y mission appli- me multi-Tactica b Joint Planning ability to establ hen this integra	underpinnings arding friendly ask will perfor This task is b e Situational A ing of data wit cation and dev al Data Link (T ; Network (JPN ish two-way in ation, with a fo rge the JDN an	of Network Ce y forces. There im the systems eing led by the wareness Adva h our coalition elopment of an CADIL) network N. The evolvin interfaces betwee cus on near-ter id JPN environt	ntric Operation is no single sys engineering, are Army and is be nced Concept 7 partners throug Interface Contr ts of the Joint I g primary mecl en GCCS FoS a m delivery of w	al Warfare. T stem or missio chitecture deve ing done in co Fechnology De h the developr rol Document. Data Network ( hanism for sup and Link 11/16 varfighting cap	he FIOP program n application the elopment, and in pordination with emonstration. (JDN) and the G porting this type is (via the Air De pability, but is	m focus at ntegration the Blue non Global e of efense nmand

Exhibit R-2, RDT&E Bud	get Item Justification	DATE February 2004
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0207443F FAMILY OF INTEROP (	OPERATIONAL PIC (FIOP)
and Control and finally the Link processors to a converged implement	itation.	
Precision Fires Support - Ground Fires systems require accurate targe coordinates to those systems. This is a critical element of the DoD's	-	
Network Based Services - For several FIOP tasks, an implicit require environment. The collective set of infrastructure components that can infrastructure (CII). This task includes support for the development of enable the use of the web-based network services that were developed rapidly access, manipulate and display trusted data in a changing env	n provide the network based services support can be ref of those CII components that will be made part of the C d for the C2 Community of Interest. The CII provides s	ferred to as the common integrated command and Control (C2) Enterprise and
Web Enabled Execution Management - This task began in FY02 and the battle. These tools are comprised of mission managers and task c tools will provide greater horizontal and vertical integration of the Jo	coordination managers and use the standard DoD COE s	
Red Force Situational Awareness Picture - Similar to JBFSA, there is will provide an integrated Red Force information service that will be		rated picture of the enemy forces. This effort
Ground Moving Target Indicators (GMTI) - The data pertaining to m throughout the C2 Community of Interest. The GMTI effort will tran		
Meterology Oceanography (METOC) - There is currently no single r Commanders require weather information pertinent to the local geogra a common format to the combatant commanders in a near real-time a	raphical area not available on national systems. The we	eather information would have to be provided in
Targeting Interoperability - There are a variety of efforts and systems time domains. Multiple time critical targeting systems employed by planning and execution. Also, targeting data is not sufficiently integr making.	the Services are not interoperable and do not share targe	eting information which affect fire support
The Family of Interoperable Operational Pictures is in Budget Activi fielding, operational support activities, and support of special projects		e it support development, integration solutions,
R-1	Shopping List - Item No. 96-3 of 96-11	Exhibit R-2 (PE 0207443F)
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Exhibit R-2, RDT&E Budge	et Item Justification		DATE Februa	ry 2004		
DGET ACTIVITY System Development and Demonstration (SDD)	PE NUMBER AND TITLE					
B. Program Change Summary (\$ in Millions)						
	<u>FY 20</u>	<u>03</u>	<u>FY 2004</u>	<u>FY 200</u>		
I) Previous President's Budget	0.0	00	0.000	0.00		
U) Current PBR/President's Budget	0.0	00	0.000	44.94		
) Total Adjustments	0.0	00	0.000			
) Congressional Program Reductions						
Congressional Rescissions						
Congressional Increases						
Reprogrammings						
SBIR/STTR Transfer						
I) <u>Significant Program Changes:</u>						

	Exh	ibit R-2a, F	RDT&E Pro	ject Justifi	ication			DATE	February	2004
	T ACTIVITY stem Development and Demonstration	ion (SDD)		0	E NUMBER AND 207443F FAN OPERATIONA	ILY OF INTE	ROP		BER AND TITLE of Interopera Pictures (FIO	
	Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
5137	Family of Interoperable Operational Pictures (FIOP)	0.000	0.000	44.947	45.201	41.438	51.720		0.000	0.000
	Quantity of RDT&E Articles	0	0	0	0	0	0	0		

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

The Family of Interoperable Operational Pictures (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 the FIOP program to "...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 FIOP effort will lead to the underpinnings of Network Centric Operational Warfare. The FIOP program focus includes the following areas:

Joint Blue Force Situational Awareness (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 programs and the Joint Blue Force Situational Awareness Advanced Concept Technology Demonstration.

Situational Awareness Data Interoperability - This task will allow the bidirectional sharing of data with our coalition partners through the development of a Common Operational Environment (COE)-compliant, web-based network gateway mission application and development of an Interface Control Document.

Tactical Data Link Integration - There is a lack of integration between the multi-Tactical Data Link (TADIL) networks of the Joint Data Network (JDN) and the Global Command and Control Systems (GCCS) Family of Systems (FoS) of the Joint Planning Network (JPN). The evolving primary mechanism for supporting this type of integration is the Multi-TADIL Capability segment, which provides the ability to establish two-way interfaces between GCCS FoS and Link 11/16 (via the Air Defense Systems Integrator). The objective of this effort is to expand and strengthen this integration, with a focus on near-term delivery of warfighting capability, but is simultaneously designed to support a longer range transition to architectures that converge the JDN and JPN environments and evolve the GCCS FoS to Joint Command and Control and finally the Link processors to a converged implementation.

Precision Fires Support - Ground Fires systems require accurate target coordinates. This task will provide web-based Global Positioning Systems enhanced target coordinates to those systems. This is a critical element of the DoD's efforts to reduce fratricide while increasing combat effectiveness.

Network Based Services - For several FIOP tasks, an implicit requirement is that the network infrastructure can support the information being promulgated in a warfighting environment. The collective set of infrastructure components that can provide the network based services support can be referred to as the common integrated infrastructure (CII). This task includes support for the development of those CII components that will be made part of the Command and Control (C2) Enterprise and Project 5137 R-1 Shopping List - Item No. 96-5 of 96-11 Exhibit R-2a (PE 0207443F)

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	Justification	ſ	February	/ 2004
DGET ACTIVITY System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)	5137 Far	NUMBER AND TITLE nily of Interoper nal Pictures (FIC	able
enable the use of the web-based network services that were developed for the C rapidly access, manipulate and display trusted data in a changing environment.	C2 Community of Interest. The CII provides	s smart adaptive ser	vices that allow wa	arfighters to
Web Enabled Execution Management - This task began in FY02 and provides r the battle. These tools are comprised of mission managers and task coordinatio tools will provide greater horizontal and vertical integration of the Joint Forces	on managers and use the standard DoD COE	L	U	
Red Force Situational Awareness Picture - Similar to JBFSA, there is no single will provide an integrated Red Force information service that will be made avai		egrated picture of th	e enemy forces. T	his effort
Ground Moving Target Indicators (GMTI) - The data pertaining to moving grout throughout the C2 Community of Interest. The GMTI effort will transform the				
Meterology Oceanography (METOC) - There is currently no single repository f Commanders require weather information pertinent to the local geographical ar a common format to the combatant commanders in a near real-time automated	rea not available on national systems. The v	weather information		
Targeting Interoperability - There are a variety of efforts and systems that supportime domains. Multiple time critical targeting systems employed by the Service planning and execution. Also, targeting data is not sufficiently integrated across making.	es are not interoperable and do not share tar	geting information	which affect fire su	upport
The Family of Interoperable Operational Pictures is in Budget Activity 5 (Syste fielding, operational support activities, and support of special projects.	em Development and Demonstration) becau	se it support develo	opment, integration	solutions,
<ul> <li><b>B. Accomplishments/Planned Program (\$ in Millions)</b></li> <li>No Activity</li> </ul>		<u>FY 2003</u> 0.000	<u>FY 2004</u> 0.000	<u>FY 2005</u>
) Web Enabled Execution Management Spirals 4 & 5				13.936
<ul> <li>Situational Awareness Data Interoperability</li> <li>Network Based Services</li> </ul>				5.638 5.516
) Precision Fires Support Spiral 3 and Phase III				6.864
) Joint Blue Force Situational Awareness				12.13
				0.05
) Tactical Data Link Integration		0.000	0.000	
) Tactical Data Link Integration ) Total Cost		0.000	0.000	0.858 44.947

	UNCLASSIFIED	
Exhibit R-2a, RDT&E F	DATE February 2004	
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PROJECT NUMBER AND TITLE 5137 Family of Interoperable Operational Pictures (FIOP)	
U) <u>C. Other Program Funding Summary (\$ in Millions)</u>		
U) <u>D. Acquisition Strategy</u> JROC-directed activity to spiral develop, integrate, and sustain web- execution-level requirements and candidate solutions which will be to		
Project 5137 R-1	1 Shopping List - Item No. 96-7 of 96-11 708	Exhibit R-2a (PE 020744

E	xhibit R-3, RD	T&E Project Cost	Analysis	5					DATE	Februa	rv 200	)4
BUDGET ACTIVITY 05 System Development and Demonst		0207443F FAMILY OF INTEROP 5				5137 I	PROJECT NUMBER AND TITLE 5137 Family of Interoperable Operational Pictures (FIOP)					
(U) Cost Categories	Contract Method	Performing Activity &	Total	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	Cost to	<u>Total</u>	Target
(Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>&amp; Туре</u>	Location	Prior to FY 2003 Cost	<u>2003</u> <u>Cost</u>	2003 Award Date	<u>2004</u> <u>Cost</u>	2004 Award Date	<u>2005</u> <u>Cost</u>	2005 Award Date	<u>Complete</u>	<u>Cost</u>	Value of Contract
(U) Web Enabled Execution Management	Various	Various						13 936	Dec-04	Continuing	TBD	
Subtotal Web Enabled Execution Management	various	v urious	0.000	0.000		0.000		13.936		Continuing	TBD	
Remarks: The WEEMC effort has been (U) Tactical Data Link Integration	planned, programm	ned and budgeted in prior	years in PE	0207438	F. This	is not a N	New Star	t				
(*)	MIPR	SPAWAR PM-157, San Diego, CA	0.000	0.000		0.000		0.858	Dec-04	Continuing	TBD	
Subtotal Tactical Data Link Integration Remarks: This effort has been planned, <u>Situational Awareness Data</u>	programmed and b	udgeted in prior years in	0.000 PE0604754F	0.000 5. This i	s not a ne	0.000 ew start.		0.858		Continuing	TBD	0.000
(U) Interoperability	MIPR	CECOM PEO/C3T						5 638	Feb-05	Continuing	TBD	
Subtotal Situational Awareness Data Interoperability			0.000	0.000		0.000		5.638		Continuing	TBD	
Remarks: This effort has been planned, (U) <u>Network Based Services</u>	programmed and b	udgeted in prior years in	PE0604754F	7. This i	s not a ne	ew start.						
、	Various	HQ ESC/NI-2, Hanscom AFB, MA						5.516	Jan-05	Continuing	TBD	
Subtotal Network Based Services Remarks: This effort has been planned,	programmed and b	udgeted in prior years in	0.000 PE0604754F	0.000 5. This i	s not a ne	0.000 ew start.		5.516		Continuing	TBD	0.000
(U) Joint Blue Force Situational Awareness	MIPR	HQ Dept of Army/G8, Washington DC						12.135	Mar-05	Continuing	TBD	
Subtotal Joint Blue Force Situational Awareness			0.000	0.000		0.000		12.135		Continuing	TBD	0.000
Remarks: This effort has been planned, (U) <u>Precision Fires Support</u>	programmed and b	pudgeted in prior years in 2	PE0603850F	. This i	s not a ne	ew start.						
	MIPR	USMC Systems						6.864	Jan-05	Continuing	TBD	
Project 5137		R-1 Shopping List -	ltem No. 96-8	of 96-11						Evhibit R	-3 (PF 0)	207443F)

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	UNC	CLASSIFIED							
Ex	Exhibit R-3, RDT&E Project Cost Analysis								
BUDGET ACTIVITY <b>5 System Development and Demonstra</b>	tion (SDD)	0207443F FAMILY OF INTEROP 5137			5137 Fa	February 200 ECT NUMBER AND TITLE 'Family of Interoperable rational Pictures (FIOP)			
	Command, Quantico VA	,			<b>I</b> ,	-			
Subtotal Precision Fires Support			0.000	0.000	6.864	Continuing	TBD	0.00	
Remarks: This effort has been planned, pr U) Total Cost	ogrammed and budgeted in prior years		0.000	a new start. 0.000	44.947	Continuing	TBD	0.00	
Project 5137	R-1 Shopping L	ist - Item No. 96-9 o	of 96-11			Exhibit R-	3 (PE 020	7443F)	

Exhibit R-4, RDT&E Schedu	e Profile		DATE February 2004
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0207443F FAMILY OF INTEROP OPERATIONAL PIC (FIOP)	5137 Fa	TNUMBER AND TITLE amily of Interoperable onal Pictures (FIOP)

# **FIOP Milestone Schedule**

FY	2003	2004	2005	2006	2007	2008	2009
JBMC2		Asewc.u	FCOM Eng Plan 🖌		al Architecti rai Update	б Сови б SIAP	rged JBMC2 Picture SIGP, ForceNet
WEEMC	Cont spi Award	al 1 2 3	4 5	5	•		4. 44
COP W/S	C2PC V59	ФС V6Д Dellu	ery – Tactical CO P Wo	iks ta tion			
JBFSA		CON	)PS A htegrated	Architectures and Capa	bility D rops	A Synched B Picture	li e Force SA
TDL Int.	CONOPS	SP. 1	SP. 2	Integrated JDN/JPN			
SADI		SP. 1	2 3		and Final Delivery (	-	
NBS	Cross System WTI	NBS	G (Idabice C 2COI	C2 in frast	ructure and into-Seruio	e Updates	
Prec Fires Sppt.		SP. 1	SP. 2	SP.3	Fully integrate d Pre	cision Fires Capability	

Exhibit R-4a, RDT&E	DATE Febru	DATE February 2004		
UDGET ACTIVITY 5 System Development and Demonstration (SDD)	Iopment and Demonstration (SDD)       PE NUMBER AND TITLE         OPERATIONAL PIC (FIOP)			
U) <u>Schedule Profile</u>	FY 2003	<u>FY 2004</u>	FY 2005	
U) WEEMC Contract Award				
J) WEEMC Spiral 1 Delivery		1Q		
J) WEEMC Spiral 2 Delivery		3Q		
J) WEEMC Spiral 3 Delivery		4Q		
J) WEEMC Spiral 4 Delivery		-	30	
J) WEEMC Spiral 5 Delivery			40	
J) Tactical COP Workstation Initial Delivery	2Q			
J) Tactical COPWorkstation Final Delivery		3Q		
J) JBMC2 - FIOP Sys. Engineering Working Group (SEWG) and JFCOM	M Intial Engineering Pla	3Q	20	
CompletedUpdates Follow		-		
J) JBMC2 - Semi Annual Architectural Updates			1&3	
) JBFSA - CONOPS Complete			20	
) JBFSA - 1st iteration of Integrated and Operational Architectures feed	ing into Integrated		4	
Capability Delivery				
J) TDL Integration - CONOPS		2Q		
J) TDL Integration - Spiral 1 Delivery		3Q		
J) TDL Integration - Spiral 2 Delivery		-	30	
I) SADI - Spiral 1		4Q		
J) SADI - Spiral 2			20	
J) SADI - Spiral 3			40	
NBS - Cross System Weapon Target Pairing Information Service		4Q		
J) NBS - C2 Community of Interest Guidance published			30	
J) Pre. Fires Suppt Spiral 1		3Q		
J) Pre. Fires Suppt Spiral 2			30	
Project 5137 R-1 S	Shopping List - Item No. 96-11 of 96-11	Exhibit I	R-4a (PE 020744	