

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	32,247	30,496	17,442	4,344	8,098	6,441	10,122	Continuing	TBD
4818 Imaging and Targeting Support	18,058	0	0	0	0	0	0	0	17,454
4820 Sensor Development	14,189	14,657	10,582	4,344	8,098	6,441	10,122	Continuing	TBD
4945 High Altitude Subsystems	0	15,839	6,860	0	0	0	0	0	27,099
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

Note: High Altitude Subsystems is a new BPAC to administratively replace Imaging and Targeting Support which exists in two PEs. Imaging and Targeting Support was previously called Advanced Technology -- a portion of which was moved from PE 0305206F effective FY01. Sensor Development was previously called Manned Reconnaissance Systems U-2 and was moved from PE 0305207F effective FY01. These are merely realignment and name changes of BPACs to more accurately describe efforts within the U-2 Program.

- In FY02, the U-2 program received \$79.5M as part of the Defense Emergency Response Fund (DERF). Funding was used for Counter-Terrorism activities in support of Operation Enduring Freedom. This funding is not reflected in the FY02 program total.
- In FY03, the U-2 program anticipates receiving \$10.8M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funding will be used for RAS-1R NRE in the U-2 program.

(U) **A. Mission Description**
 The RDT&E portion of this program element funds efforts required to enhance and sustain the U-2 Dragon reconnaissance aircraft. The RDT&E efforts in this PE focus on sensor and safety of flight projects. In addition to the RDT&E funding there are procurement funds associated with these developments.

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BUDGET ACTIVITY		PE NUMBER AND TITLE			
07 - Operational System Development		0305202F Dragon U-2 (JMIP)			
(U) <u>B. Budget Activity Justification</u>					
This program element is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development for the U-2 Aircraft.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	27,546	32,804	13,965	TBD
(U)	Appropriated Value	32,546	30,804		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions		-308		
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram				
	e. Rescissions	-299			
(U)	Adjustments to Budget Years Since FY 2002 PBR			3,477	
(U)	Current Budget Submit/FY 2003 PBR	32,247	30,496	17,442	TBD
(U) <u>Significant Program Changes:</u>					
FY03 includes \$3.477 added for U-2 in BPAC 674820 Sensor Development for ASARS-2A program.					

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)	PROJECT 4818
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4818 Imaging and Targeting Support	18,058	0	0	0	0	0	0	0	17,454

Note: FY02 and outyear funding in PE 0305202F/BPAC 674945 (High Altitude Sub-systems).

(U) **A. Mission Description**

This project supports the U-2 Advanced Defensive System (ADS) development. ADS is designed to provide situational awareness and self-protection jamming to degrade and or detect the ability of surface-to-air weapon systems to engage the U-2 aircraft. A full ADS capability will be achieved through spiral upgrades. Spiral upgrades will address modern RF signals in the baseline system. Follow-on upgrades will include infrared warning and defense. Onboard and offboard data fusion will be provided as a growth provision to enhance situational awareness.

(U) **FY 2001 (\$ in Thousands)**

- (U) \$11,838 Defensive System Hardware Development
- (U) \$5,500 Software Development
- (U) \$570 SPO Support
- (U) \$150 System Test
- (U) \$18,058 Total

(U) **FY 2002 (\$ in Thousands)**

- (U) \$0 Funding moved to PE 0305202F/BPAC 674945
- (U) \$0 Total

(U) **FY 2003 (\$ in Thousands)**

- (U) \$0 Funding transferred to PE 0305202F/BPAC 674945 in FY02
- (U) \$0 Total

(U) **B. Project Change Summary**

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)			PROJECT 4818			
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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>Complete</u>		
(U) Other APPN										
(U) D. Acquisition Strategy										
Funds are for the engineering, manufacturing and development for the U-2 Advanced Defensive System (ADS). A sole source contract was awarded to a prime contractor which will be responsible for delivering a total system. Efforts include the development of ADS, integration on the U-2 aircraft, testing and production planning.										
(U) E. Schedule Profile										
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
			1	2	3	4	1	2	3	4
(U) U-2 ADS Milestone II										
(U) ADS Phase II Contract Award										
(U) Begin ADS Flight Testing										
							X			
Project 4818			Page 4 of 15 Pages			Exhibit R-2A (PE 0305202F)				

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0305202F Dragon U-2 (JMIP)				4818		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Hardware and Software Development					17,338				
(U)	Mission Support					570				
(U)	System Test					150				
(U)	Total					18,058				
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Adv Def Sys Cont	CPIF	Mar 00	27,800	27,800		17,338			Continuing	TBD
<u>Support and Management Organizations</u>										
ASC/RA						570			Continuing	TBD
<u>Test and Evaluation Organizations</u>										
Eglin AFB, Edwards AFB						150			Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						17,338			TBD	TBD
Subtotal Support and Management						570			TBD	TBD
Subtotal Test and Evaluation						150			TBD	TBD
Total Project						18,058			TBD	TBD

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)	PROJECT 4820
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4820 Sensor Development	14,189	14,657	10,582	4,344	8,098	6,441	10,122	Continuing	TBD

In FY03, the U-2 program anticipates receiving \$10.8 from the Cost of War Transfer Account. These funds are not included in the FY03 Air Fore baseline. Funding will be used for RAS-1R NRE in the U-2 program.

(U) A. Mission Description

This development project supports high payoff improvements to the U-2 sensors such as the Advanced Synthetic Aperture Radar System (ASARS-2A) and the SENIOR YEAR Electro-optical Reconnaissance System (SYERS) 2 Improvement Program.

The ASARS-2A Program improves area search, precision geolocation, and image quality characteristics sufficiently to directly support the targeting of Precision Guided Munitions (PGMs). Complex imagery will be produced by the ASARS-2A system and support significant exploitation products for the imagery analysts. ASARS-2A introduces Asynchronous Transfer Mode (ATM) datalink formats to the ISR community and supports National Imagery Transmission Format (NITF) standards. Requirements include ASARS-2A reliability improvements/corrections and exploitation tools for the user (for example, system robustness, Dual Data Link (DDL), Beyond Line of Sight (BLOS), image quality, Ground Moving Target Indication (GMTI), Electronic Counter-Countermeasures (ECCM), REC upgrades and software upgrades. Developing new LRUs with next generation technology will make ASARS-2A supportable through the expected service life of the U-2 and provide capability enhancements necessary to support PGMs. Improvements to ASARS-2A modes are transferable to Global Hawk High Altitude Endurance Unmanned Aerial Vehicles (HAE UAV).

The SYERS 2 Improvement Program includes upgrades such as multi-spectral collection and processing, polarization collection and processing, possible hyperspectral collection and processing, and the associated exploitation tools for the user. SYERS 2 also includes reliability and maintainability upgrades to incorporate next generation technology, maintaining and enhancing system supportability.

The RF Int Enhancements Program maintains present capability by developing replacements for current components affected by diminishing manufacturing sources as well as injecting capability to cope with evolving signals of interest.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0305202F Dragon U-2 (JMIP)	4820
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$894	Continue ASARS-2A Development	
(U) \$2,585	Continue On-Board Processor (OBP) and Receiver Exciter Controller (REC) Improvements	
(U) \$1,418	Continue Dual Data Link (DDL-II) Interface to ASARS-2A/SYERS 2	
(U) \$596	Conduct Image Quality (IQI) Enhancements	
(U) \$1,385	Implement Software Updates	
(U) \$530	Flight Test	
(U) \$686	Mission Support	
(U) \$1,141	Fuels Conversion	
(U) \$4,954	SYERS Polarimetric Development (SYERS 2)	
(U) \$14,189	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$1,770	Continue ASARS-2A Interface to Dual Data Link (DDL-II)	
(U) \$6,957	Continue ASARS-2A Image Quality Improvement (IQI) Software/Hardware Development and System Robustness Improvements	
(U) \$400	Image Chain Analysis	
(U) \$500	Implement ECCM Upgrades	
(U) \$500	ASARS-2A Flight Test	
(U) \$2,000	RF-INT Enhancements	
(U) \$2,000	SYERS Polarimetric Development (SYERS 2)	
(U) \$530	Mission Support	
(U) \$14,657	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$3,400	Continue ASARS-2A Image Quality Improvement (IQI) Software/Hardware Development Tasks and System Robustness Improvements	
(U) \$500	SYERS Upgrades (such as SYERS Polarimetric and Geolocation Models)	
(U) \$6,682	RF Int Enhancements/ALF Non-Recurring Engineering	
(U) \$0	No Activity	
(U) \$10,582	Total	
Project 4820	Page 7 of 15 Pages	Exhibit R-2A (PE 0305202F)

UNCLASSIFIED

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<p>(U) <u>B. Project Change Summary</u> Congressional mark increased funding for SYERS polarimetric development in FY01 and FY02.</p> <p>FY02 -- From the original FY02 PB Position, moved \$1000K Advanced Defensive System funding and \$1100K Fuels Conversion funding from the Sensor Development BPAC (674820) to the more appropriate High Altitude Subsystems BPAC (674945). Also move \$2000K RF-Int Enhancements from 674945 to 674820.</p>																																																																																																																														
<p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) APAF, Manned Recce, 0305202F - ASARS-2A Production</td> <td style="text-align: right;">12,777</td> <td style="text-align: right;">18,659</td> <td style="text-align: right;">4,000</td> <td style="text-align: right;">4,100</td> <td style="text-align: right;">4,500</td> <td style="text-align: right;">4,500</td> <td style="text-align: right;">5,700</td> <td style="text-align: right;">0</td> <td style="text-align: right;">54,236</td> </tr> <tr> <td>(U) APAF, Manned Recce, 0305202F - DDL-II Production</td> <td style="text-align: right;">6,510</td> <td style="text-align: right;">12,390</td> <td style="text-align: right;">12,970</td> <td style="text-align: right;">17,580</td> <td style="text-align: right;">20,280</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">69,730</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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>Complete</u>		(U) APAF, Manned Recce, 0305202F - ASARS-2A Production	12,777	18,659	4,000	4,100	4,500	4,500	5,700	0	54,236	(U) APAF, Manned Recce, 0305202F - DDL-II Production	6,510	12,390	12,970	17,580	20,280	0	0	0	69,730																																																																													
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<p>(U) <u>D. Acquisition Strategy</u> For airborne collection capability upgrades, modify existing platform and associated ground control equipment via Engineering Change Proposals (ECPs)/Task Orders to existing USAF contracts. For ASARS-2A and SYERS, develop and test new technology line replaceable units (LRUs). There is associated procurement funding tied to this development activity.</p>																																																																																																																														
<p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:45%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="4" style="text-align: center;"><u>FY 2003</u></th> </tr> <tr> <td></td> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) ASARS-2A Program</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) - Begin DDL-II Phase 1 and DDL-II Phase 2</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) - Begin IQI Activities</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) - Continue DDL-II Interface</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) - Continue IQI Activities</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) SYERS 2 Improvement Program</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) - Begin SYERS Polarametric Development</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>											<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) ASARS-2A Program													(U) - Begin DDL-II Phase 1 and DDL-II Phase 2													(U) - Begin IQI Activities													(U) - Continue DDL-II Interface													(U) - Continue IQI Activities													(U) SYERS 2 Improvement Program													(U) - Begin SYERS Polarametric Development												
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<p>(U) <u>E. Schedule Profile Continued</u></p> <table style="width:100%; border: none;"> <thead> <tr> <th style="width: 40%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="2" style="text-align: center;"><u>FY 2003</u></th> </tr> </thead> <tbody> <tr> <td style="width: 40%;">(U) Begin Fuel Conversion Phase II</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> <tr> <td>Note: * denotes completed event, X denotes planned event.</td> <td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>											<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		(U) Begin Fuel Conversion Phase II	1	2	3	4	1	2	3	4	1	2	3	4	Note: * denotes completed event, X denotes planned event.						X						
	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>																																					
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BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
07 - Operational System Development				0305202F Dragon U-2 (JMIP)				4820			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	DDL-II Interface					1,418		1,770			
(U)	IQI Hardware/Software Development and System Robustness Improvements					5,990		8,357		3,400	
(U)	Mission Support					686		530			
(U)	JP-8 FUELS CONVERSION					1,141					
(U)	SYERS Polarimetric (SYERS 2)					4,954		2,000		500	
(U)	RF Int Enhancements/ALF Non-Recurring Engineering							2,000		6,682	
(U)	Total					14,189		14,657		10,582	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Raytheon and BF (ASARS-2A and SYERS 2)	CPIF/CPFF	3Q96	80,982	105,000	0	11,832	11,627	3,600	Continuing	TBD
	RF Int Enhancements	CPIF	3Q02					2,000	6,682		8,682
	AFRL (Fuels Conversion)	CPIF	3Q99				1,141				1,141
	<u>Support and Management Organizations</u>										
	ASC/RA (from ASARS-2A)						686	530	300	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	Edwards AFB						30				30
	Palmdale						500	500		Continuing	TBD
Project 4820				Page 10 of 15 Pages				Exhibit R-3 (PE 0305202F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0305202F Dragon U-2 (JMIP)			4820	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development	0	12,973	13,627	10,282	TBD
	Subtotal Support and Management		686	530	300	TBD
	Subtotal Test and Evaluation		530	500		TBD
	Total Project	0	14,189	14,657	10,582	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)	PROJECT 4945
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4945 High Altitude Subsystems	0	15,839	6,860	0	0	0	0	0	27,099

Note: FY01 funding included in PE 0305202F/BPAC 674818. In FY02 this BPAC changed number and title to High Altitude Subsystems to correct BPAC duplication of 674818 in PEs 35202F and 35206F.

(U) A. Mission Description

This project supports development and integration of subsystems on the U-2 (e.g., Advanced Defensive System (ADS) development, RF Int, cockpit upgrades, navigator upgrades, datalinks), and U-2 specific interfaces required to other systems developed in other program elements (PEs).

The U-2 Advanced Defensive System (ADS) development provides an new Wide Band Rada Warning Receiver/ Jammer for Search, Track and Launch Detection capability and Track and Launch Jamming capability. The new RWR/Jammer will integrate with the legacy 29E Low Band Receiver/Jammer, 29F Radar Warning Receiver, and portions of the System 29 Band Aid System.

The Fuels Conversion Program is an AFRL research program attempting to develop a low temperature additive for JP-8 to substitute the current JPTS U-2 fuel. The additive will lower per gallon fuel costs and decrease the U-2's logistical footprint.

The Dual Data Link (DDL)-II Program provides the capability to transmit ISR data via dual, simultaneous, independent wideband datalinks. The RF Int Enhancements Program maintains present capability by developing replacements for current components affected by diminishing manufacturing sources as well as injecting capability to cope with evolving signals of interest.

(U) FY 2001 (\$ in Thousands)

- (U) \$0** Funding included in BPAC 674818/PE 0305202F
- (U) \$0** Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002																																								
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)		PROJECT 4945																																									
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$13,423 Advanced Defensive System Block 30. Includes hardware/software development program and test program</p> <p>(U) \$1,100 Fuels Conversion</p> <p>(U) \$1,316 Continue Dual Data Link NRE, integration and test</p> <p>(U) \$15,839 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$4,009 Advanced Defensive System (ADS) Block 30. Includes hardware/software development program and test program.</p> <p>(U) \$2,851 Complete Dual Data Link -2 development program</p> <p>(U) \$6,860 Total</p> <p>(U) <u>B. Project Change Summary</u></p> <p>In FY02, the DDL-II program received \$20M as part of the Defense Emergency Relief Fund (DERF) and these funds are addressed in the U-2 35202F P-Series documents.</p> <p>Also in FY02, the DDL-II program received a \$4.0M Research & Development (3600) funding cut.</p> <p>FY02 -- From the original FY02 PB Position, moved \$1000K Advanced Defensive System funding and \$1100K Fuels Conversion funding from the Sensor Development BPAC (674820) to the more appropriate High Altitude Subsystems BPAC (674945). Also move \$2000K RF-Int Enhancements from 674945 to 674820.</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&E</td> <td align="right">0</td> </tr> <tr> <td>(U) Other APPN</td> <td align="right">0</td> <td align="right">19,200</td> <td align="right">24,200</td> <td align="right">22,500</td> <td align="right">16,500</td> <td align="right">11,200</td> <td align="right">10,600</td> <td align="right">0</td> <td align="right">104,200</td> </tr> </tbody> </table>									<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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>Complete</u>		(U) AF RDT&E	0	0	0	0	0	0	0	0	0	(U) Other APPN	0	19,200	24,200	22,500	16,500	11,200	10,600	0	104,200
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																						
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(U) AF RDT&E	0	0	0	0	0	0	0	0	0																																						
(U) Other APPN	0	19,200	24,200	22,500	16,500	11,200	10,600	0	104,200																																						
Project 4945			Page 13 of 15 Pages			Exhibit R-2A (PE 0305202F)																																									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)						DATE February 2002																																																																																																																																																												
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)		PROJECT 4945																																																																																																																																																												
<p>(U) <u>D. Acquisition Strategy</u> Funds are for the engineering, manufacturing and development for the U-2 Advanced Defensive System (ADS). A sole source contract has been awarded to a prime contractor which will be responsible for delivering a total system. For the ASARS-2A Program, funds will be used for Image Quality Improvements (IQI) and for System Robustness Improvements. For DDL-II, develop, factory test and flight test the dual data link systems, and continue integration of ABIT P3I into datalink design. DDL-II utilizes existing CPIF contracts.</p>																																																																																																																																																																		
<p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="4"><u>FY 2001</u></th> <th colspan="4"><u>FY 2002</u></th> <th colspan="4"><u>FY 2003</u></th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>(U) U-2 ADS Milestone 2 (Occurred 2Q00)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) ADS Phase 2 Contract Award (3Q00)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) ADS First Prototype Delivery</td> <td></td><td></td><td></td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Begin ADS Testing</td> <td></td><td></td><td></td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) ADS Program Complete</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td> </tr> <tr> <td>(U) DDL-II Development & Integration Contract Award</td> <td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) DDL-II DT Testing Complete</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td> </tr> <tr> <td>(U) Complete DDL-II SIL Testing</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td><td></td><td></td> </tr> <tr> <td>(U) Complete DDL-II Flight Testing</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td> </tr> <tr> <td>(U) DDL-II LRIP Award</td> <td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>									<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) U-2 ADS Milestone 2 (Occurred 2Q00)													(U) ADS Phase 2 Contract Award (3Q00)													(U) ADS First Prototype Delivery							X						(U) Begin ADS Testing							X						(U) ADS Program Complete												X	(U) DDL-II Development & Integration Contract Award				*									(U) DDL-II DT Testing Complete												X	(U) Complete DDL-II SIL Testing										X			(U) Complete DDL-II Flight Testing												X	(U) DDL-II LRIP Award							*					
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0305202F Dragon U-2 (JMIP)			4945		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Hardware and Software Development							13,423		4,009
(U)	Government Engineering Support									
(U)	Fuels Conversion							1,100		
(U)	DDL-II							1,316		2,851
(U)	Total							15,839		6,860
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
ADS Ctr	CPIF	Mar 00	N/A	N/A			10,393	3,859	Continuing	TBD
Fuels Conversion							1,100			1,100
DDL-II Dev and Test	CPIF	Various					1,316	2,351	Continuing	TBD
<u>Support and Management Organizations</u>										
ASC/RA							180	150	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
Eglin AFB, Edwards AFB							2,850	500	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development							12,809	6,210	TBD	TBD
Subtotal Support and Management							180	150	TBD	TBD
Subtotal Test and Evaluation							2,850	500	TBD	TBD
Total Project							15,839	6,860	TBD	TBD