

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604706F: Life Support Systems							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	8.017	9.720	7.273	-	7.273	11.213	8.588	9.404	9.573	Continuing	Continuing
65412A: Life Support Systems	-	8.017	9.720	7.273	-	7.273	11.213	8.588	9.404	9.573	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date												
Note												
In FY 2012, Project 65412A, Life Support Systems, two projects were terminated: Modular Aircrew Common Helmet (MACH) and Flash Blindness Goggles. Funds were realigned from MACH, Flash Blindness Goggles, and Body Armor System to support an Urgent Operational Need (UON) for development of a Ballistic Aircrew Helmet. This Air Forces Central UON was validated by Air Combat Command in May 2012.												
In FY 2014, Project 65412A, Life Support Systems, includes a New Start for Aircrew Laser Eye Protection Block III.												
A. Mission Description and Budget Item Justification												
This Program Element (BPAC 65412A) provides recapitalization, continuing research and analysis, development, integration, test and certification for aircrew flight equipment and airmen combat systems to satisfy joint operational requirements focused on improved and enhanced airmen performance capabilities. Aircrew flight equipment and airmen combat systems consist of human-centered programs that enable weapon systems to optimize full mission envelopes, maximize combat capabilities, and protect airmen. Such efforts include, but are not limited to, the following projects: directed energy protective equipment; flight helmets and visors; oxygen breathing systems for aircrew; radios and locator beacons; support equipment; nuclear flash blindness protection; night vision devices; noise reduction devices; anti-g suits; flame resistant, retardant and blast protective gear; aircraft seating; impact protection equipment; flotation devices; parachutes; ejection seats; and other life support systems required by the warfighter. This project assesses deficiencies and conditions of currently fielded equipment; evaluates and demonstrates feasibility of new technologies; facilitates transition of new technologies to development programs; conducts business case analyses; assesses suitability of commercially available items; and provides other RDT&E support to aircrew flight equipment and airmen combat systems programs.												
BA5 - This program is in Budget Activity 5, Engineering and Manufacturing Development (EMD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.												

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B. Program Change Summary (\$ in Millions)		FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget		9.280	9.720	7.273	-	7.273
Current President's Budget		8.017	9.720	7.273	-	7.273
Total Adjustments		-1.263	0.000	0.000	-	0.000
• 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		-1.026	0.000			
• SBIR/STTR Transfer		-0.237	0.000			
• Other Adjustments		0.000	0.000	0.000	-	0.000
Change Summary Explanation Decrease in FY 2012 for higher Air Force priorities.						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2012	FY 2013	FY 2014
Title: Aircrew Flight Equipment (AFE)				0.100	0.000	0.000
Description: This project is a small-dollar, generic effort that evaluates the feasibility of using commercial-off-the-shelf (COTS) and non-developmental item technologies for life support equipment capabilities that may/may not require robust Engineering and Manufacturing Development. The current effort under the AFE project is a COTS Low Profile Parachute (LPP), which aims to replace antiquated Vietnam-era flight equipment to meet Air Force Special Operation Command requirements. The AFE project may include tasks associated with equipment engineering, modification, integration, testing, and procurement of test articles for certification.						
FY 2012 Accomplishments: Conducted analysis and testing of LPP at Edwards AFB.						
FY 2013 Plans: Complete testing at Edwards AFB; provide safe-to-fly certifications for users.						
FY 2014 Plans: N/A						
Title: Cold Weather Aviation System (CWAS)				0.000	0.300	0.250

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<b>Description:</b> This effort evaluates a multi-layered system, which consists of garments, boots and gloves, that will be utilized by aircrew members in arctic weather conditions reaching temperatures as low as -49 degrees Fahrenheit.  <b>FY 2012 Accomplishments:</b> N/A  <b>FY 2013 Plans:</b> Initiate Requests for Information; perform market research; accomplish developmental planning.  <b>FY 2014 Plans:</b> Begin testing of Government Off The Shelf (GOTS) and/or COTS solutions.				
<b>Title:</b> Flash Blindness Goggles  <b>Description:</b> This effort develops eye protection against high intensity and rapid onset flashes encountered during nuclear blast.  <b>FY 2012 Accomplishments:</b> The Flash Blindness Goggles program was cancelled. Funding for this effort was transferred within BPAC 65412A to support the Ballistic Helmet Urgent Operational Need due to cancellation of requirement.  <b>FY 2013 Plans:</b> N/A  <b>FY 2014 Plans:</b> N/A		0.000	0.000	0.000
<b>Title:</b> Integrated Aircrew Body Armor  <b>Description:</b> This effort integrates multiple components into a single system with the combined capabilities of soft/hard body armor, aircrew survival gear, restraint/recovery harness, and life preserver unit. This provides maximum armor coverage of the torso and enhances ease of use and maneuverability.  <b>FY 2012 Accomplishments:</b> N/A  <b>FY 2013 Plans:</b> Initiate Requests for Information; perform market research; accomplish developmental planning.  <b>FY 2014 Plans:</b>		0.000	0.300	0.250

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Begin testing of Government Off The Shelf (GOTS) and/or COTS solutions.				
<b>Title:</b> Integrated Aircrew Ensemble (IAE)  <b>Description:</b> This effort develops an IAE to replace the existing aircrew flight ensemble to improve acceleration protection and mitigate thermal burden. An IAE will replace multiple layers of flight gear such as flight suit, G-suit, survival vest and other equipment used during flight operations. This IAE will improve safety, survivability and performance through the use of modern materials to address the full spectrum of aircrew requirements.  <b>FY 2012 Accomplishments:</b> Completed preliminary design review; developed and tested multiple garment layers; redesigned integrated flight layer.  <b>FY 2013 Plans:</b> Complete Critical Design Review; continue Developmental Testing and Evaluation (DT&E); complete component level testing; start system level testing.  <b>FY 2014 Plans:</b> Continue DT&E; conduct Milestone C decision prior to Low Rate Initial Production.		4.755	7.406	3.106
<b>Title:</b> Modular Aircrew Common Helmet (MACH)  <b>Description:</b> This effort develops a common helmet to increase combat capability and reduce the number of helmet variants.  <b>FY 2012 Accomplishments:</b> The MACH program was cancelled. Remaining funds used for costs associated with contract closeout.  <b>FY 2013 Plans:</b> N/A  <b>FY 2014 Plans:</b> N/A		0.050	0.000	0.000
<b>Title:</b> Voice in Beacon (ViB)  <b>Description:</b> This effort provides two-way, line of sight voice and personnel locator beacon capability for peacetime operations to allow downed aircrew to communicate with civil and combat search and rescue assets.  <b>FY 2012 Accomplishments:</b> Initiated Requests for Information; conducted market research; accomplished developmental planning.  <b>FY 2013 Plans:</b>		0.050	0.100	0.500

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Begin EMD activities based on developmental planning analysis.				
<b>FY 2014 Plans:</b> Continue Engineering & Manufacturing Development.				
<b>Title:</b> Aircrew Laser Eye Protection (ALEP) Block III - New Start  <b>Description:</b> This effort develops capabilities to protect aircrew members susceptible to the harmful effects of visible threats, i.e., hazardous lasers. It specifically improves upon ALEP Block II (spectacles) capability through development of a visor solution.  <b>FY 2012 Accomplishments:</b> N/A  <b>FY 2013 Plans:</b> N/A  <b>FY 2014 Plans:</b> Initiate Requests for Information; undergo market research; accomplish Business Case Analysis and Analysis of Alternatives.		0.000	0.000	1.000
<b>Title:</b> Ballistic Helmet Urgent Operational Need  <b>Description:</b> This effort provides capability in support of an Air Forces Central (AFCENT) Urgent Operational Need (UON) for improved ballistic protection for aircrew members. The ballistic helmet will replace existing HGU-56/P helmets used for rotary aircrew. The design will factor impact protection, weight trade-offs and integration with sensors, visor-mounted displays and existing devices required for Combat Search and Rescue operations.  <b>FY 2012 Accomplishments:</b> Conducted course of action (COA) planning, market research; industry studies, and COA selection; initiated contract awards for prototype development, delivery and testing.  <b>FY 2013 Plans:</b> Finish test and evaluation; provide production recommendation to warfighter.		0.075	0.150	0.000
<b>Title:</b> Management Services  <b>Description:</b> This effort provides program management, travel funding, and test and evaluation support.  <b>FY 2012 Accomplishments:</b> Accomplished management services.  <b>FY 2013 Plans:</b>		2.987	1.464	2.167

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Continue management services.			
<b><i>FY 2014 Plans:</i></b> Continue management services.			
<b>Accomplishments/Planned Programs Subtotals</b>	8.017	9.720	7.273

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPAF:BA04:842990: <i>Items Less Than \$5 Million</i>	0.000	7.452	5.801		5.801	8.098	8.161	8.271	8.420	Continuing	Continuing
<b>Remarks</b>											
<b>E. Acquisition Strategy</b> The majority of efforts funded in this project employ a streamlined acquisition approach. Whenever practical, GOTS/COTS items are tested and evaluated as candidates for solutions to user needs. This normally involves characterization, verification, and qualification testing to ensure GOTS/COTS equipment is properly certified and adapted for military purposes. However, acquisition strategies may be carried out at the project level for traditional EMD, e.g., IAE and ALEP Block III.											
<b>F. Performance Metrics</b> 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.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				PROJECT					
3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)						PE 0604706F: Life Support Systems				65412A: Life Support Systems					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircrew Flight Equipment (AFE) (Low Profile Parachute)	C/FFP	Butler Parachute:Roanoke, VA	-	0.100	Aug 2012	0.000		0.000		-		0.000	0.000	0.100	TBD
Ballistic Helmet	C/FFP	Multiple Contractors:,	-	0.075	May 2012	0.150	Apr 2013	0.000		-		0.000	Continuing	Continuing	
Cold Weather Aviation System	TBD	TBD:TBD,	-	0.000		0.300	Jul 2013	0.250	Feb 2014	-		0.250	Continuing	Continuing	TBD
Flash Blindness Goggles	TBD	TBD:TBD,	-	0.000		0.000		0.000		-		0.000	Continuing	Continuing	TBD
Integrated Aircrew Body Armor System	TBD	TBD:TBD,	-	0.000		0.300	Jul 2013	0.250	Feb 2014	-		0.250	Continuing	Continuing	TBD
Integrated Aircrew Ensemble (IAE)	C/FPIF	Tiax:Lexington, MA	-	4.755	Feb 2012	7.406	Jan 2013	3.106	Apr 2014	-		3.106	Continuing	Continuing	TBD
Modular Aircrew Common Helmet (MACH)	C/FPIF	Gentex:Simpson, PA	-	0.050	Aug 2012	0.000		0.000		-		0.000	0.000	0.050	TBD
Voice in Beacon (ViB)	TBD	TBD:TBD,	-	0.050	Feb 2012	0.100	Mar 2013	0.500	Dec 2013	-		0.500	Continuing	Continuing	TBD
Aircrew Laser Eye Protection (ALEP) Block III	TBD	TBD:TBD,	-	0.000		0.000		1.000	Aug 2013	-		1.000	Continuing	Continuing	
Subtotal			0.000	5.030		8.256		5.106		0.000		5.106			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Tests (IAE, MACH, etc.)	Various	Various:Various,	-	0.500		0.800		0.500		-		0.500	Continuing	Continuing	
Subtotal			0.000	0.500		0.800		0.500		0.000		0.500			

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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	TBD	ASC/WNU:Wright-Patterson AFB, OH	-	2.087		0.364		1.200		-		1.200	Continuing	Continuing	
Travel	Various	Various:Various,	-	0.400		0.300		0.467		-		0.467	Continuing	Continuing	
<b>Subtotal</b>			0.000	2.487		0.664		1.667		0.000		1.667			

	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	8.017		9.720		7.273		0.000		7.273			

**Remarks**



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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

**APPROPRIATION/BUDGET ACTIVITY**

3600: Research, Development, Test & Evaluation, Air Force  
BA 5: System Development & Demonstration (SDD)

**R-1 ITEM NOMENCLATURE**

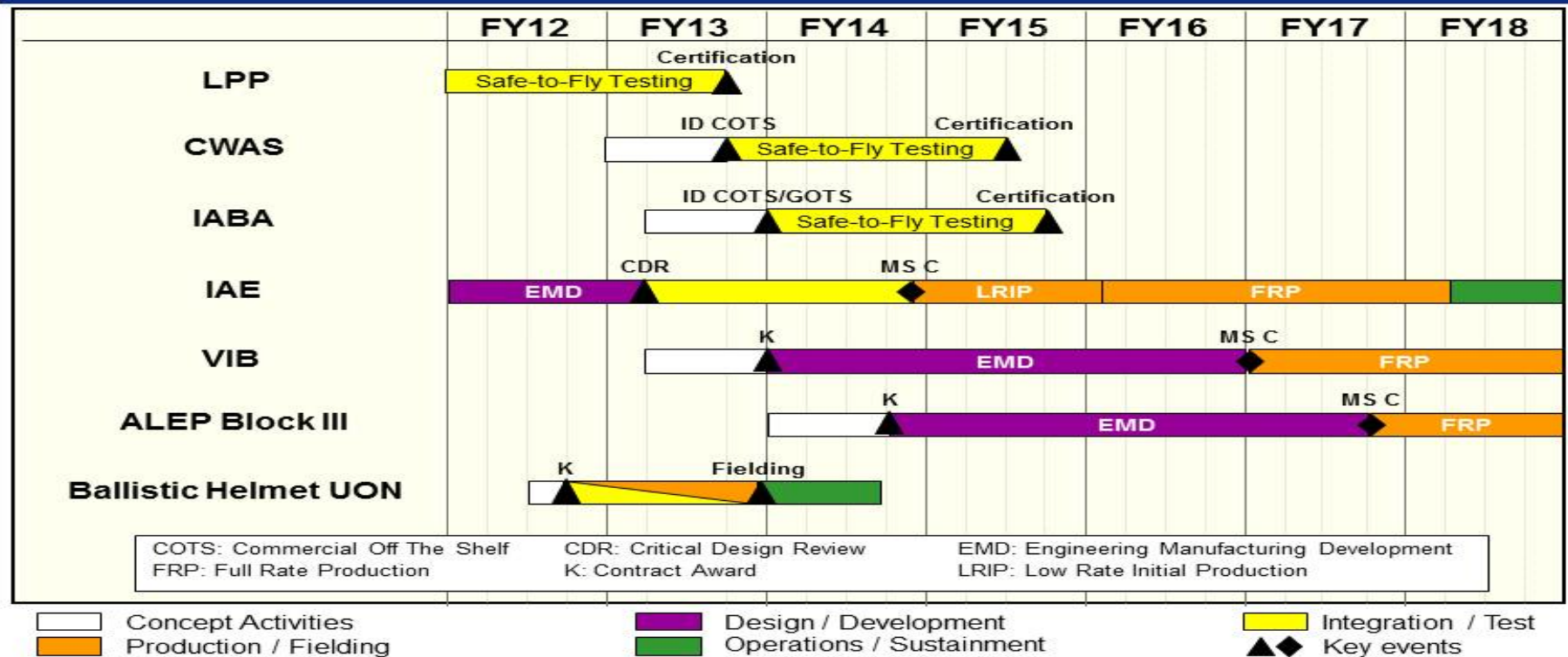
PE 0604706F: Life Support Systems

**PROJECT**

65412A: Life Support Systems



# LSS RDT&E Schedule



FY14 Staffer Brief

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Air Force			<b>DATE:</b> April 2013
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## Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Aircrew Flight Equipment - LPP [Engineering and Manufacturing Development]	1	2012	4	2013
Ballistic Helmet [Design & Development]	4	2012	2	2013
CWAS [Engineering and Manufacturing Development]	2	2014	1	2016
Integrated Aircrew Body Armor [Engineering and Manufacturing Development]	2	2014	2	2015
ALEP Block III [Business Case Analysis and Analysis of Alternatives]	4	2013	4	2014
ALEP Block III [Engineering Manufacturing and Development]	4	2014	3	2017
IAE [Engineering and Manufacturing Development]	1	2012	3	2014
IAE [Developmental Test & Evaluation]	4	2012	4	2012
IAE [Milestone C]	3	2014	4	2014
IAE [Low Rate Initial Production]	3	2014	2	2015
IAE [Initial Operational Test & Evaluation]	3	2014	3	2014
IAE [Full Rate Production Decision Review]	2	2015	4	2017
ViB [Business Case Analysis and Analysis of Alternatives]	3	2012	4	2013
ViB [Engineering and Manufacturing Development]	1	2014	4	2016
ViB [Milestone C]	4	2016	4	2016