Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*							
COST ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	65.844	127.925	21.000	-	21.000	8.000	-	-	-	Continuing	Continuing
675372: *Integrated Sensor IS Structure*	-	45.925	21.000	-	21.000	8.000	-	-	-	Continuing	Continuing
676019: *Blue Devil*	65.844	63.000	-	-	-	-	-	-	-	Continuing	Continuing
67A026: *MAGIC*	-	19.000	-	-	-	-	-	-	-	Continuing	Continuing

Note

FY11 funding includes $65.844M for Overseas Contingency Operations.

FY12 funding includes $63.0M for Overseas Contingency Operations.

FY13 funding totals do not currently include $29.7M requested for Overseas Contingency Operations.

The Cost to Complete and Total Cost for MDAP projects in this program element are documented in the R3. The Cost to Complete and Total Cost on the R2 are entered as "Continuing" and not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding.

A. Mission Description and Budget Item Justification

This PE focuses USAF efforts on long endurance platforms which allow days, months, or years of endurance, as well as their associated sensors and communications suites. Efforts include, but are not limited to, airships and more standard aircraft structures.

The Integrated Sensor IS Structure (ISIS) project develops a radar which is fully integrated into a station-keeping, stratospheric airship. ISIS supports the nation's need for persistent wide-area surveillance, tracking, and engagement of time-critical air and ground targets. Automated surveillance and tracking includes air targets to the radar horizon of 600 km and all ground targets to a range of 300 km. The radar aperture is intended to provide track data and other communications directly to users in-theater. The system is planned to launch from CONUS locations with a multi-year operational life. No support personnel or facilities are required in-theater. Efforts include work on the ground station and the corresponding Processing, Exploitation, and Dissemination (PED) connectivity.

The Blue Devil Block 2 (BD2) project is an Air Force-led single ship technology and concept demonstration of multi-intelligence, cross-platform tipping and cueing of fused SIGINT, wide area and high-definition (HD) EO/IR motion imagery on a persistent lighter-than-air (LTA) airship. BD2 will employ a payload integration infrastructure (PII) with a Command and Control (C2) and Processing, Exploitation, and Dissemination (PED) Ground Station. This effort directly supports multiple validated CENTCOM urgent operational needs, and contributes directly to force protection and counter Improvised Explosive Device (IED) missions for Coalition Forces.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305205F: *Endurance Unmanned Aerial Vehicles*

The Medium Altitude Global ISR and Communications (MAGIC) project develops a multiple day, medium altitude ISR unmmanned aerial system (UAS) to provide long endurance surveillance with a multiple sensor payload.

Funds also cover activities to include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	56.000	52.425	20.907	-	20.907
Current President's Budget	65.844	127.925	21.000	-	21.000
Total Adjustments	9.844	75.500	0.093	-	0.093
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-16.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	19.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	9.844	73.000	0.093	-	0.093

Change Summary Explanation

FY11 increase of $9.844M provided by ISR Task Force and JIEDDO to accelerate purchase of an ARGUS camera system for Blue Devil 2 sensor suite.

FY12 funding reflects the following actions:

- Congressional Directed Reduction of $6.5M to Project 675372, ISIS (Previous President's Budget Figure)

- OCO request of $73M to Project 676019, Blue Devil 2, less $10M Congressional Directed Reduction

- Congressional add of $19M to Project 67A026, MAGIC

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 675372: *Integrated Sensor IS Structure*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675372: *Integrated Sensor IS Structure*	-	45.925	21.000	-	21.000	8.000	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Integrated Sensor IS Structure (ISIS) Program develops a radar fully integrated into a station-keeping stratospheric airship. ISIS supports the nation's need for persistent wide-area surveillance, tracking, and engagement of time-critical air and ground targets. Automated surveillance and tracking includes air targets to the radar horizon of 600 km and all ground targets to a range of 300 km. The radar aperture also is intended to provide track data and other communications directly to users in-theater. The system is planned to launch from CONUS locations with a multi-year operational life. No support personnel or facilities are required in-theater. Efforts include work on the ground station and the corresponding Processing, Exploitation, and Dissemination (PED) connectivity.

DARPA funded development of the prototype in FY11-12. Air Force will contribute funding in FY12-FY14 to this joint DARPA - Air Force project to complete and demonstrate the prototype. This project includes completion of the designs for the radar, propulsion, power systems, and the airframe. The project also includes development and testing of the hull materials, antenna design/production, calibration system design, software development for the radar and flight control systems, and integration of the radar into the hull structure. This system will demonstrate capability in FY14.

Funds also cover studies and analysis to support current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: ISIS	-	45.925	21.000	-	21.000
Description: Design, develop, and demonstrate a radar integrated into a station-keeping airship.					
FY 2011 Accomplishments: N/A					
FY 2012 Plans: Fabricate prototype design; test initial radar performance; begin preparations for initial flight review.					
FY 2013 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 675372: *Integrated Sensor IS Structure*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Will complete radar fabrication; continue integrating radar into airship structure. Will begin integration testing and preparation for demo in FY14.					
Accomplishments/Planned Programs Subtotals	-	45.925	21.000	-	21.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RDT&E, DARPA, PE 0603283E, ...: *N/A*	21.500	5.000	5.000	0.000	5.000	0.000	0.000	0.000	0.000	0.000	267.900
• RDT&E, AF, PE 0603203F, Adva...: *N/A (1)*	0.000	3.400	5.000	0.000	5.000	4.000	0.000	0.000	0.000	0.000	12.400

D. Acquisition Strategy

This is a Cost-Plus-Fixed-Fee contract with a total value of $462M. The project is being funded with a cost sharing agreement between the Air Force and DARPA under a Memorandum of Agreement. Air Force funds intended for the contract are being provided to DARPA via a Military Interdepartmental Purchase Request (MIPR) for obligation. The Air Force Research Laboratory is acting as the Contracting Officer's Technical Representative for DARPA. The prime contractor is Lockheed Martin Aeronautics of Palmdale, CA and the radar sub is Raytheon Space and Airborne Systems, El Segundo, CA.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 675372: *Integrated Sensor IS Structure*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype Development	C/CPFF	Lockheed Martin:Palmdale, CA	113.533	45.925	Nov 2011	21.000		-		21.000	8.000	188.458	462.000
		Subtotal	113.533	45.925		21.000		-		21.000	8.000	188.458	462.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	113.533	45.925		21.000		-		21.000	8.000	188.458	462.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 675372: *Integrated Sensor IS Structure*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305205F: *Endurance Unmanned Aerial Vehicles*	**PROJECT** 675372: *Integrated Sensor IS Structure*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Prototype Design	1	2011	3	2011
Development	1	2011	2	2014
Demonstration	2	2014	2	2015

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 676019: *Blue Devil*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
676019: *Blue Devil*	65.844	63.000	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY 2011 funding totals include $65.844M appropriated for Overseas Contingency Operations.

FY 2012 funding totals include $63.0M requested for Overseas Contingency Operations.

FY 2013 funding totals do not currently include $29.7M requested for Overseas Contingency Operations.

A. Mission Description and Budget Item Justification

The Blue Devil Block 2 (BD2) system is an Air Force led single ship technology and concept demonstation of multiple intelligence sensors, cross-platform tipping and cueing of fused SIGINT data, wide area and high-definition (HD) EO/IR motion imagery on a persistent lighter-than-air (LTA) airship. BD2 is being developed to employ a payload integration infrastructure (PII) with a Command and Control (C2) and Processing, Exploitation, and Dissemination (PED) Ground Station. This effort directly supports multiple validated CENTCOM urgent operational needs, and contributes directly to force protection and counter Improvised Explosive Device (IED) missions for coalition Forces. BD2 is a rapid acquisition technology demonstration that started in FY 2010.

The Blue Devil Block 2 initiative is supported by the Joint Improvised Explosive Device Defeat Organization (JIEDDO) and monitored intently as a program of interest by OSD's ISR Task Force. JIEDDO in coordination with the ISR Task Force provide $9.844M in FY11 to accelerated the procurement of the ARGUS IS Electro-Optical/Infra-Red (EO/IR) camera system. A $10.0M reduction in FY12 funding paid for the accelerated purchase of the ARGUS EO/IR sensor with FY11 funding.

Funds also cover studies and analysis to support current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Blue Devil 2	65.844	63.000	-	-	-
Description: Develop and rapidly field an integrated multi-intelligence system on a persistant lighter-than-air airship with organic tipping and cueing of fused SIGINT to on-board wide field of view and narrow field of					

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 676019: *Blue Devil*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
view EO/IR motion imagery systems. Procurement of the ARGUS IS Electro-Optical/Infra-Red (EO/IR) camera system for enhanced high resolution imagery. ***FY 2011 Accomplishments:*** Continue development, integration, and test of the Blue Devil 2 system. Some FY 2011 funding was used to purchase long lead spares and begin preparations for the deployment to theater for the operational demonstration. ***FY 2012 Plans:*** Complete development, integration and test of the Blue Devil 2 system. Continue preparations for transport and deployment to the CENTCOM theater of operations for the operational demonstration of this long endurance capability. ***FY 2013 Base Plans:*** OCO funding - see OCO FY13 Effort Description. ***FY 2013 OCO Plans:*** If funded, will support continued Blue Devil 2 demonstration in theater and document lessons learned.					
Accomplishments/Planned Programs Subtotals	65.844	63.000	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RDT&E AF, PE 0305206F, Airbo...: *JIEDDO*	29.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The Blue Devil Block 2 (BD2) initiative is being executed by the 645 AESG (BIG SAFARI) to field this COCOM requested, SECDEF mandated, long endurance quick reaction capability to address COCOM urgent operational needs. BD2 will be executed as a rapid acquisition program in order to field the capability as quickly as possible.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 676019: *Blue Devil*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Airship Development	SS/CPFF	MAV-6:Vicksburg, MS	84.780	6.000	Nov 2011	-		-		-	0.000	90.780	0.000
ARGUS EO Sensor Development	SS/FFP	BAE:Nashua, NH	18.844	-		-		-		-	0.000	18.844	0.000
Sensors, Datalinks, GFE Integration	C/FFP	Various:Location not provided.	28.330	-		-		-		-	0.000	28.330	0.000
Sensor Integration and Test Support	TBD	L-3Com:Greenville, TX	10.400	7.500	Nov 2011	-		-		-	0.000	17.900	0.000
Operational Demonstration Support	C/CPAF	Various:,	11.600	46.500	Nov 2011	-		-		-	0.000	58.100	0.000
		Subtotal	153.954	60.000		-		-		-	0.000	213.954	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA	TBD	645 AESG:Dayton, OH	3.340	3.000		-		-		-	0.000	6.340	0.000
		Subtotal	3.340	3.000		-		-		-	0.000	6.340	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 676019: *Blue Devil*	

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	157.294	63.000		-		-		-	0.000	220.294	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 676019: *Blue Devil*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305205F: *Endurance Unmanned Aerial Vehicles*	**PROJECT** 676019: *Blue Devil*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Increment 1 - Airship Design	1	2011	1	2012
Increment 1 - Integration and Test	2	2011	3	2012
Increment 2 - ARGUS EO Development	3	2011	1	2012
Increment 2 - ARGUS EO Integration and Test	1	2012	3	2012
Operational Demo	3	2012	4	2013

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 67A026: *MAGIC*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
67A026: *MAGIC*	-	19.000	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY 2011, $8M was reprogrammed to conduct MAGIC efforts.

A. Mission Description and Budget Item Justification

The Medium Altitude Global ISR and Communications (MAGIC) project is an Air Force led technology and concept development to test the ability for medium altitude remotely piloted aircraft (RPA) to stay aloft for a five-day duration with a minimum of 1,000 pounds payload capacity of multiple intelligence, surveillance and reconnaissance sensors. The MAGIC project concept was initiated in 2010 by five COCOMs ranking this initiative as the highest priority joint concept and tecnology demonstration (JCTD) but the with the Air Force accepting this initiative it is no longer under consideration as a JCTD.

Data gathered from the MAGIC project will support end-to-end long endurance ISR planning. Persistent ISR supports both regular and irregular warfare. The challenge to supporting regular and irregular warfare is the integration of legacy ISR architectures with emerging end-to-end infrastructures. The MAGIC project will provide the USAF with critically needed data regarding sensor and aircraft performance parameters at a five-day duration flight. This data will augment the Persistent ISR study completed by ACC and AFMC in March 2011. This project is designed to meet the requirement of two joint urgent operational needs for long dwell and persistent ISR. The objectives of the MAGIC project is to fly an RPA for a duration of five days with a minimum sensor payload of 1,000 pounds at 20,000 feet.

In FY10, OSD/DDR&E (now ASD/R&E) provided $5M to AFRL for initial funding of the MAGIC project. In FY11, DDR&E provided an additional $5M to keep the project moving forward. The Air Force followed suit and provided $3M of end of year FY11 below threshold reprogramming (BTR) to allow the Aurora Flight Sciences development team to set up for an operational five-day running engine bench test in preparation for an inflight five-day duration flight test of the Orion RPA at a later date. The five-day duration running engine bench test is projected to occur in late January or early February 2012.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: MAGIC	-	19.000	-	-	-
Description: Development of a SIL facility for aircraft controls and fault tolerance maturation through modeling and simulation tools, and continuation of endurance studies to identify mean time between failures on key airframe and flight control components, sensor system components, and communication data links in preparation for the integration of components in the development of a long duration, ISR sensor carrying Remotely Piloted Aircraft with the capacity to stay aloft for five days with a minimum of 1,000 pounds of sensor payload in a flight structure at or above 20,000 feet.					

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 67A026: *MAGIC*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
FY 2011 Accomplishments: Begin design and development of airframe components such as landing gear and hydraulic breaks, propeller pitch determination, actuator testing to mitigate latent defects, software development for avionic system functionality, and Li-ION battery development to meet performance specifications in the in the development of a long duration, ISR sensor carrying Remotely Piloted Aircraft with the capacity to stay aloft for five days with a minimum of 1,000 pounds of sensor payload in a flight structure at or above 20,000 feet. ***FY 2012 Plans:*** Continued development of avionics and flight controls software, sensor systems and data links, and airframe and power plant components that will enable the ground and flight testing of a long duration, ISR sensor carrying Remotely Piloted Aircraft with the capacity to stay aloft for five days with a minimum of 1,000 pounds of sensor payload in a flight structure at or above 20,000 feet.					
Accomplishments/Planned Programs Subtotals	-	19.000	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RDT&E, PE 0305205F, Enduranc...: *MAGIC MIPR/BTR*	8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Current funding availability provides for the studies and bench testing of select avionics, flight controls, and engine components. If and when additional funding is sourced, a five day duration flight test could be accomplished within 9 to 12 months after receipt of funds. If the five day duration flight test is successful, the next acquistion objective is to procure a deployable capability. One orbit of capability is defined as three RPAs, one ground station and the sensor payload provided as government furnished equipment (GFE).

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 67A026: *MAGIC*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Design and Development	C/CPAF	Not specified.:Manassas, VA	-	19.000	Mar 2012	-		-		-	0.000	19.000	0.000
		Subtotal	-	19.000		-		-		-	0.000	19.000	0.000

Remarks

Aurora Flight Sciences, headquartered in Manassas, VA is the prime contractor on the MAGIC project. Aurora's Orion remotely piloted aircraft is the airborne asset being developed and progressed towards the five-day duration flight test with Aurora's Centaur/Diamond DA42 optionally piloted aircraft being used for risk mitigation initiatives prior to Orion's flight testing.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-	0.000	0.000	0.000

Remarks

645 AESG (BIG SAFARI SPO) assumed program management of the MAGIC project in May 2011.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305205F: *Endurance Unmanned Aerial Vehicles*	PROJECT 67A026: *MAGIC*	

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	19.000		-		-		-	0.000	19.000	0.000

Remarks

OSD/DDR&E provided $5M in FY 2010 as a MIPR to AFRL. OSD/DDR&E provided another $5M in FY 2011. An Air Force below threshold reprogramming provided $3M in late FY 2011.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305205F: *Endurance Unmanned Aerial Vehicles*	**PROJECT** 67A026: *MAGIC*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305205F: *Endurance Unmanned Aerial Vehicles*	**PROJECT** 67A026: *MAGIC*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Design, Develop, Integrate and Test	1	2012	1	2013