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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0207277F I ISR Innovations							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	0.000	5.750	5.750	0.000	0.000	0.000	0.000	Continuing	Continuing
675373: ISR Innovations Program	-	0.000	0.000	0.000	5.750	5.750	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program, BA 07 PE 0207277F, project 675373, ISR Innovations, is a new start.

A. Mission Description and Budget Item Justification

A family of systems providing high-impact, quick-reaction capabilities to Warfighters for mission planning, rehearsal, visualization, and intelligence gathering purposes. Program components include: Eagle Vision, DoD's only world-wide deployable commercial imagery ground station capability, and ISR Innovations, rapid prototyping, operational evaluation and fielding of short-notice, high-payoff capabilities addressing immediate gaps and/or shortfalls identified by Warfighting activities.

FY18 funds support NOWcasting, Atmospheric Sensing and Prediction System (ASAPS), and Caldera Event.

1. NOWcasting: NOWcasting is an automated system that provides intuitive, animated, machine-to-machine weather forecasts directly to warfighter computer applications every 15 minutes. NOWcasting expands on current weather models by incorporating non-traditional sources of weather information (the most significant being Space Based Infrared System [SBIRS] data) that significantly increases forecast resolution and accuracy. Its exploitation of SBIRS PoR data sources helps maximize the effectiveness of existing OPIR architecture and data sources.

2. ASAPS: Atmospheric Sensing and Prediction System (ASAPS) is a platform-integrated sensor for detecting adverse weather conditions such as clouds and icing. Sensing of other adverse weather phenomena, specifically lightning, would further protect valuable airborne assets and support mission success. While initially envisioned to improve environmental awareness for Remotely Piloted Aircraft--which are particularly susceptible to lightning damage due to their composite structure--the technology could expand to contribute to the distributed, collaborative, and self-organizing sensor systems providing environmental threat detection for autonomous swarming aircraft.

3. Caldera Event: Caldera Event is a non-GPS system that provides Position, Navigation, Timing (PNT), and Geolocation Capabilities in an fully GPS-denied or jammed environment. The prototype system provides insight and experimentation for the future of combined PNT, Electronic Warfare, and communications systems.

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.

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B. Program Change Summary (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total		
Previous President's Budget		0.000	0.000	0.000	0.000	0.000		
Current President's Budget		0.000	0.000	0.000	5.750	5.750		
Total Adjustments		0.000	0.000	0.000	5.750	5.750		
• Congressional General Reductions		0.000	0.000					
• Congressional Directed Reductions		0.000	0.000					
• Congressional Rescissions		0.000	0.000					
• Congressional Adds		0.000	0.000					
• Congressional Directed Transfers		0.000	0.000					
• Reprogrammings		0.000	0.000					
• SBIR/STTR Transfer		0.000	0.000					
• Other Adjustments		0.000	0.000	0.000	5.750	5.750		
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: ISR Innovations				0.000	0.000	0.000	5.750	5.750
Description: NOWcasting, ASAPS, and Caldera.								
FY 2016 Accomplishments: N/A								
FY 2017 Plans: N/A								
FY 2018 Base Plans: N/A								
FY 2018 OCO Plans: NOWcasting: Improve the transfer and use of non-traditional weather data to optimize NOWcasting. Conduct an Operational Utility Evaluation to verify NOWcasting’s accuracy. Develop new windows for the Afghanistan and Africa. ASAPS: Develop ASAPS lightning sensing ability.								

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C. Accomplishments/Planned Programs (\$ in Millions)											
	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total						
Caldera Event: Expand Advantaged Reference Node Test Network OCONUS with partners. Iterate build to print designs. Integrate with Open Systems Architecture. Define performance parameters for Military Grade Equipment.											
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.000	5.750	5.750						
D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018 Base</u>	<u>FY 2018 OCO</u>	<u>FY 2018 Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	-
Remarks											
E. Acquisition Strategy											
NOWcasting: Developmental partnership with Air Force Space Command's Space and Missile Systems Center in pursuit of their Space Modernization Initiative (Project 657009) within the Space Based Infrared System (SBIRS) High EMD program (Program Element 0604441F). Specific contract TBD.											
ASAPS: Developmental partnership with Air Force Research Laboratory's Sensor's Directorate in pursuit of their Sensor Fusion Technology Project (Project 626095) within the Aerospace Sensors Program (Program Element 0602204F). Specific contract TBD.											
Caldera Event: Developmental partnership with Air Force Research Lab and Air Force Tactical Exploitation of National Capabilities through AFLCMC C3I and Networks Directorate, Special Programs Division.											
F. 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.											