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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0207420F I <i>Combat Identification</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	0.000	1.866	1.902	0.000	1.902	1.910	1.994	2.034	2.028	0.000	11.734
642742: <i>IFF/ATC Test and Certification</i>	-	0.000	1.866	1.902	0.000	1.902	1.910	1.994	2.034	2.028	0.000	11.734
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Cooperative Combat Identification employs technologies required to rapidly identify friendly platforms. The program develops, integrates and evaluates technologies that provide Air Force platforms with a means of positively identifying an air or ground platform as a friendly, via active or passive cooperative identification capabilities. The development funded by this project ensures availability of a Mode 5 upgrade path for implementing ground and air platforms across the Air Force fleet. The Department of Defense International AIMSP0 has system level interoperability testing and certification responsibilities for the current Mark XIIB system, development and integration of new Identification Friend or Foe (IFF) system capabilities, and development/integration of civil Mode S capabilities into Mark XIIB Identification Friend or Foe equipment. The AIMSP0 ensures Identification Friend or Foe equipment/platform functionality in accordance with established standards and ensures total system interoperability to meet Department of Defense/Service mission areas (e.g. Offensive Counter Air, Defensive Counter Air, and Integrated Air and Missile Defense).

The cooperative goals will be to test and certify the Mark XIIB system, develop and integrate the new Mark XIIB Identification Friend or Foe system capability (Mode 5 Level 2 Broadcast) and also continue the development/integration of civil Mode S capabilities into Mark XIIB Identification Friend or Foe equipment using newly fielded M-code GPS receivers. The cooperative funds will be used to fund projects and personnel who develop and test technical standards, perform certification testing, process certifications and track all Office of the Secretary of Defense and Federal Aviation Administration guidelines to ensure the program remains current. The Office of the Secretary of Defense and Federal Aviation Administration guidelines required Mode 5 be fully implemented by FY 2020 but many platforms continue to integrate this capability. The Department of Defense AIMS Program will ensure those certifications are current on all applicable platforms/systems and work with both domestic and foreign military sales partners to ensure compliance. The funds also support Department of Defense representation to several military (United States and NATO) and civil (Federal Aviation Administration, International Civil Aviation Organization and Radio Technical Commission for Aeronautics) requirements meetings for Mode 5, Mode S and ADS-B. These important meetings allow the Department of Defense to remain interoperable with our foreign military partners as well as the United States and international civil aviation community. Department of Defense AIMS Program will continue to update the Department of Defense AIMS Mark XIIB Standards, Security Classification Guide, Handbook, and Test Requirements.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	0.000	1.866	1.898	0.000	1.898
Current President's Budget	0.000	1.866	1.902	0.000	1.902
Total Adjustments	0.000	0.000	0.004	0.000	0.004
• 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	0.004	0.000	0.004

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
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Title: Air Traffic Control and Radar Beacon Systems Identification Friend or Foe Mark XIIA System (AIMS) Program Office	0.000	1.866	1.902
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Description: Develop and maintain technical standards on development, integration, testing, and certification of Department of Defense Identification Friend or Foe equipment. Coordinate and execute equipment/subsystem-level certifications and platform certifications of Identification Friend or Foe capabilities. Currently managing 49 active Foreign Military Sales Cases. Support NATO Identification Friend or Foe Capabilities Team (Mode 5 Identification Friend or Foe is a NATO waveform). Support International Civil Aviation Organization (ICAO) Technical Support Group (develops standards for world-wide civil Air Traffic Control). Create and maintain civil Mode S address assignments and military Mode 5 Platform Identification Number assignments for every Department of Defense platform using these waveforms in their interrogator and/or transponder equipment. The yearly User Working Group provides information to the Users on Identification Friend or Foe (IFF); provides seminars to the Users on Basic IFF, Advanced IFF, Mode 5 Test Sets and Crypto training. The main purpose of the Working Group is share solutions and resolutions between Users, NATO, COCOMs and Program Offices on IFF, Mode 5, Mode S (civil and Military).

FY 2023 Plans:
Continue updating and developing Identification Friend standards and support Mode 5 equipment for Air Traffic Control and Radar Beacon Systems Identification Friend or Foe Mark XIIA System (AIMS) for interoperability Identification Friend testing (civil and military).

FY 2024 Plans:

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Continue updating and developing Identification Friend standards and support Mode 5 equipment for Air Traffic Control and Radar Beacon Systems Identification Friend or Foe Mark XIIA System (AIMS) for interoperability Identification Friend testing (civil and military).			
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> FY 2024 increased compared to FY 2023 by \$0.036 million. Justification for this increase is described in the plans above.			
Accomplishments/Planned Programs Subtotals	0.000	1.866	1.902

D. Other Program Funding Summary (\$ in Millions)
N/A

Remarks

E. Acquisition Strategy
Combat Identification develops technologies for exploitation by the United States Air Force and the other services. Award multiple, competitive contract vehicles emphasizing off-the-shelf technology and maximizing the use of non-developmental items (NDIs). Management develops a technology to a point it can be demonstrated in a relative combat environment.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0207420F / <i>Combat Identification</i>	Project (Number/Name) 642742 / <i>IFF/ATC Test and Certification</i>
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	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Cooperative Identification Techniques	
AIMS Program Office Activities	
AIMS Program Office Annual User Working Group (May 2023)	
AIMS Program Office Annual User Working Group (May 2024)	
AIMS Program Office Annual User Working Group (May 2025)	
AIMS Program Office Annual User Working Group (May 2026)	
AIMS Program Office Annual User Working Group (May 2027)	
AIMS Program Office Annual User Working Group (May 2028)	

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Cooperative Identification Techniques</i>				
AIMS Program Office Activities	1	2023	4	2028
AIMS Program Office Annual User Working Group (May 2023)	3	2023	3	2023
AIMS Program Office Annual User Working Group (May 2024)	3	2024	3	2024
AIMS Program Office Annual User Working Group (May 2025)	3	2025	3	2025
AIMS Program Office Annual User Working Group (May 2026)	3	2026	3	2026
AIMS Program Office Annual User Working Group (May 2027)	3	2027	3	2027
AIMS Program Office Annual User Working Group (May 2028)	3	2028	3	2028