Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force											Date: March 2024	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603742F / *Combat Identification Technology*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	13.718	21.298	24.799	0.000	24.799	25.381	25.901	25.834	26.345	Continuing	Continuing
642597: *Noncooperative Identification Subsystems*	-	11.613	18.565	21.957	0.000	21.957	22.507	22.968	22.908	23.360	0.000	143.878
642599: *Cooperative Identification Techniques*	-	0.069	0.076	0.120	0.000	0.120	0.084	0.086	0.086	0.088	0.000	0.609
643420: *Combat ID Database Development*	-	2.036	2.657	2.722	0.000	2.722	2.790	2.847	2.840	2.897	Continuing	Continuing

A. Mission Description and Budget Item Justification

Combat Identification is the process of characterizing an entity in the battlespace. It is essential to determine if a battlespace entity is a friend, enemy, or neutral; this information provides battlespace commanders and aircrew with options, ranging from avoiding and monitoring to engagement. The Combat Identification team's mission is to identify new and promising technology candidates, evaluate the usefulness of the technologies, conduct demonstrations in operationally relevant environments, and coordinate strategies that expedite transition to more than one platform. This Program Element aims to integrate and transition new capabilities into fielded systems, and improve existing capabilities. The mission area consists of three projects: non-cooperative Combat Identification, cooperative Combat Identification, and Combat Identification database development.

Non-cooperative Combat Identification techniques do not depend on a response from the targeted platform - such as high range resolution radar that measures the length of a target. Cooperative Combat Identification systems require communication between two participating platforms. Combat Identification database development continues the maturation of target representations in all databases that enable non-cooperative and cooperative algorithms to perform correctly. Both non-cooperative and cooperative Combat Identification techniques are currently in the field, and are necessary elements of the kill chain that ensure mission success and reduce fratricide. Air Combat Command (ACC) established a Senior Advisory Group (SAG) as the governing authority to guide these efforts in partnership with AFRL/RY and SAF/AQR.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Combat Identification capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.0M was expended for civilian pay expenses in this program element and in FY24 0.0M is forecasted for civilian pay expenses in this program element.

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force	Date: March 2024
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	13.718	21.298	24.756	0.000	24.756
Current President's Budget	13.718	21.298	24.799	0.000	24.799
Total Adjustments	0.000	0.000	0.043	0.000	0.043
• 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	0.043	0.000	0.043

Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force											Date: March 2024	
Appropriation/Budget Activity 3600 / 4					R-1 Program Element (Number/Name) PE 0603742F / *Combat Identification Technology*				Project (Number/Name) 642597 / *Noncooperative Identification Subsystems*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
642597: *Noncooperative Identification Subsystems*	-	11.613	18.565	21.957	0.000	21.957	22.507	22.968	22.908	23.360	0.000	143.878
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Non-cooperative combat identification (CID) employs a number of sensing technologies and signal processing techniques designed to extract discriminating features from a battlespace entity (target). Specifically designed algorithms compare those extracted features to a tailored database to identify those targets. These technologies include: (A) non-cooperative Air Target Identification (ATID) technologies, (B) non-cooperative Ground Target Identification (GTID) technologies, and (C) Studies and Analysis, evaluating potential new technologies.

ATID technology development focuses on platform centric CID technologies that enhance capability to determine enemy air threats. A primary area of focus is in the development/implementation of the Joint Multi-platform Advanced Combat identification (JMAC) architecture, which is a framework that allows multiple sensors (on-board and off-board) to provide a robust combat identification solution; and efforts aimed at the discovery and generation of features from fielded sensors to supply data to JMAC. JMAC is evolving into the primary Department of Defense air target identification architecture. Other areas of focus include combat identification technologies that broaden the application of CID across air platforms utilizing larger air kill-webs planned for employment by the United Stated Air Force (USAF) and utilize assets in unmanned aerial system and space to improve and enable CID in future threat air engagements.

GTID development focuses on platform centric CID technologies that enhance capability to determine enemy ground threats. Primary areas of focus include transitioning CID capability for denied access environments using passive radio frequency and electronic warfare information, integrating radio-based technologies into the cockpit to increase confidence of target identification and situational awareness as well as reduce fratricides, and to demonstrate weapon-based combat identification back to the launch platform using a communication link from that launched weapon. GTID is also focused on developing technology to address efficiency and sustainability issues associated with the development, operation and maintenance of non-cooperative monostatic and bi-static synthetic aperture radar aided target recognition algorithms and databases. Other areas of focus include combat identification technologies that broaden the application of CID across air platforms utilizing larger air kill-webs planned for employment by the United Stated Air Force and utilize assets in unmanned aerial system and space to improve and enable CID in future threat ground engagements.

Studies and Analysis discovers novel technologies that are ready become transition-able projects, and includes Enhanced Combat ID (ECID), an activity to develop a robust ability to quantitatively evaluate promising combat identification technologies using enhanced modeling and simulation capabilities, database generation, database enhancement/employment (machine learning, deep learning, and artificial intelligence) to employ CID technologies in an operationally useful manner. The Studies and Analysis effort also performs early assessments of promising technologies through Concept Calls to determine if the program should incorporate them as a formal project within the CID portfolio.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Combat Identification capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.0M was expended for civilian pay expenses in this program element and in FY24 0.0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Studies	1.250	1.200	2.366
Description: The studies effort serves to analyze all aspects of Air Target Identification and Ground Target Identification projects to mature combat identification (CID) technologies within the CID investment strategy. The studies effort covers low Technology Readiness Level (TRL 4) efforts which are funded through CID concept call. Areas include but are not limited to automatic target recognition, denied area access CID, CID sensor feature extraction, CID database use optimization, rapid database creation/ employment for CID, synthetic data, CID focused training, off-board sensor feature employment, on-board sensor feature employment, United States Air Force CID architecture enhancements. ***FY 2024 Plans:*** Continue to conduct CID related studies. Continue modeling, simulation and analysis of CID technologies and also new Concept Call technology development. Continue machine learning and synthetic/real data operational use. Continue planning demonstrations in relevant operational environment. Continue development of a technical roadmap for CID Technologies to inform future studies. ***FY 2025 Plans:*** - Continue to conduct CID related studies. - Continue modeling, simulation and analysis of CID technologies and also new Concept Call technology development. - Continue machine learning and synthetic/real data operational use. - Continue planning demonstrations in relevant operational environment. - Continue development of a technical roadmap for CID Technologies to inform future studies. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 increased compared to FY 2024 by $1.166 million. Justification for this increase is due to an increased emphasis in Next Generation applications.			
Title: Air Target Identification	4.670	10.149	11.670
Description: The Air Target Identification (ATID) project discovers, matures and integrates features collected from any battlespace sensor into the Joint Multiplatform Advanced Combat Identification (JMAC) air target data-fusion architecture, and transitions the mode to tactical aircraft. Air Target Identification efforts include: (1) ATID Algorithm development, developing methods to extract and exploit features from fielded sensors to provide data to Joint Multiplatform Advanced Combat Identification;			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
(2) ATID Integration for combat platforms, F-16 Joint Multiplatform Advanced Combat Identification Open Mission System (OMS) Rapid Development (FJORD), the effort to demonstrate Joint Multiplatform Advanced Combat Identification on the F-16; the effort includes feature extraction/incorporation from the F-16 electronic warfare suite to enhance the JMAC. (3) ATID Integration for combat platforms, F-15 Joint Multiplatform Advanced Combat Identification (JMAC-15), investigating transition of JMAC into the F-15E/EX fleet. (4) ATID Algorithm development, exploration of sensor feature extraction for use within the JMAC architecture. ***FY 2024 Plans:*** Continue maturation of sensor feature extraction algorithms. Continue maturation and effectiveness testing of the Joint Multiplatform Advanced Combat Identification algorithms on both F-16 and F-15; algorithm optimization on 4th generation air dominance platforms through software and hardware laboratory testing. Continue feature extraction use and database incorporation of extracted features. Continue flight demonstration and data analysis of feature extraction algorithms. Initiate JMAC integration efforts on 5th generation air dominance platforms. Continue integration planning for JMAC and non-JMAC CID on unmanned and space assets. ***FY 2025 Plans:*** - Continue maturation of sensor feature extraction algorithms. - Complete maturation and effectiveness testing of the Joint Multiplatform Advanced Combat Identification algorithms on both F-16 and F-15. - Continue feature extraction use and database incorporation of extracted features. - Continue flight demonstration and data analysis of feature extraction algorithms. - Continue JMAC integration efforts on 5th generation air dominance platforms. - Continue integration planning for JMAC and non-JMAC CID on unmanned and space assets. - Initiate JMAC integration efforts on Air Force Command and Control Platforms ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 increased compared to FY 2024 by $1.521 million. Justification for this increase is due to an increased emphasis in integration efforts on Command and Control Platforms.			
Title: Ground Target Identification	5.693	7.216	7.921
Description: Ground Target Identification (GTID) technologies consist of (1) GTID Algorithm development, effective, affordable implementation of machine learning, artificial intelligence, and deep learning for tailored algorithms for synthetic aperture radar (SAR) automatic target recognition (ATR). (2) GTID Algorithm development for the use of synthetic databases to enhance SAR ATR use, training, expansion across combat platforms. (3) GTID Integration for combat platforms, Passive Radio-frequency IDentification Environment (PRIDE), an effort to develop a bistatic synthetic aperture radar (SAR) automatic target recognition (ATR) capability useful in a denied access environment; (4) GTID Integration for combat platforms, Radio Identification (RID),			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
an effort to develop methods (including machine learning and artificial intelligence algorithms) paired with advances in software defined radios to provide ground emitter ID to improve aircrew situational awareness; and (5) GTID Integration for combat platforms, Kill-chain Weapon Integrated CID (KWIC), an effort that will use information from launched weapons through a back channel communication link to provide CID from within the hot battlespace. (6) GTID Algorithm development Exploration of sensor feature extraction for use within the Joint Multiplatform Advanced Combat Identification (JMAC) architecture. ***FY 2024 Plans:*** Initiate development efforts toward identification of enemy targets in an actively denied ground environment (camouflage, concealment, denial and decoy conditions). This effort will look at sensor modes and sensor fusion to provide technical solutions to this critical challenge. Continue PRIDE efforts; finish Phase 2 efforts with an offline demonstration in Phase 2 and will ramp up for Phase 3. Continue CASE efforts; complete algorithm and database use optimization as new feature use cases are developed. Initiate integration of Kill-chain Weapon Integrated CID into program of record with potential for use application to be applied to other weapon systems. Continue planning for on-board/off-board sensor employment for JMAC and non-JMAC instantiations of CID on assets within United States Air Force planned kill-web to include both unmanned and space assets. Initiate ground components of JMAC architecture activity. ***FY 2025 Plans:*** - Continue development efforts toward identification of enemy targets in an actively denied ground environment (camouflage, concealment, denial and decoy conditions). - Continue PRIDE efforts; Phase 3 will demonstrate integrated capabilities. - Complete CASE efforts; transition technical projects to Air to Ground Analyst. - Continue integration of Kill-chain Weapon Integrated CID into program of record with potential for use application to be applied to other weapon systems. - Continue effort for on-board/off-board sensor employment for JMAC and non-JMAC instantiations of CID on assets within United States Air Force planned kill-web to include multidomain assets; demonstration of concepts. - Continue ground components of JMAC architecture activity. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 increased compared to FY 2024 by $0.705 million. Justification for this increase is described in the plans above.			
Accomplishments/Planned Programs Subtotals	11.613	18.565	21.957

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

D. Acquisition Strategy

Combat Identification develops technologies for exploitation by the United States Air Force (USAF) and other services. Award multiple, competitive contract vehicles emphasizing the use of government owned technologies, government off-the-shelf technology (GOTS), commercial off-the-shelf (COTS), and maximize the use of non-developmental items (NDIs). Management develops a technology to a point it can be demonstrated in a relevant operational environment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force			Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Concept Call - Low Shot Learning for SAR ATR	MIPR	Sandia Ntnl Laboratory : Albuquerque, NM	-	0.120		0.000		0.000		-		0.000	0.000	0.120	-
Air Target Identification (ATID) - ID Algorithm / JMAC Features	C/CPFF	Various : Various	-	2.512	Feb 2023	6.017	Feb 2024	6.696		-		6.696	Continuing	Continuing	-
Air Target Identification (ATID) - Air Platform (F16/ F15/F35/F22) JMAC Integration	C/CPFF	Multiple : Various	-	2.087	Dec 2022	2.217	Dec 2023	2.470		-		2.470	Continuing	Continuing	-
Air Target Identification (ATID) - Study 1	C/CPFF	Not specified. : TBD	-	0.200	Jan 2023	0.450	Jan 2024	0.500		-		0.500	Continuing	Continuing	-
Air Target Identification (ATID) - Study 2	C/CPFF	Not specified. : TBD	-	0.271	Nov 2023	0.168	Nov 2024	0.186		-		0.186	Continuing	Continuing	-
Air Target Identification (ATID) - Study 3	MIPR	Not specified. : TBD	-	-		0.350	Aug 2024	0.400		-		0.400	Continuing	Continuing	-
Ground Target Identification (GTID) - ID Algorithm / JMAC Features	C/CPFF	Various : Various	-	2.700	Apr 2023	4.700	Apr 2024	5.230		-		5.230	Continuing	Continuing	-
Ground Target Identification (GTID) - PRIDE	C/CPFF	Multiple : Various	-	1.319	Jun 2023	0.000		1.164		-		1.164	Continuing	Continuing	-
Ground Target Identification (GTID) - KWIC	C/CPFF	Multiple : Various	-	-		0.943	Dec 2023	1.020		-		1.020	Continuing	Continuing	-
Ground Target Identification (GTID) - Study 1	C/CPFF	Not specified. : TBD	-	0.283	Feb 2023	0.400	Feb 2024	0.450		-		0.450	Continuing	Continuing	-
Ground Target Identification (GTID) - Study 2	C/CPFF	Not specified. : TBD	-	0.271	Nov 2023	0.168	Nov 2024	0.190		-		0.190	Continuing	Continuing	-
Ground Target Identification (GTID) - Study 3	MIPR	Not specified. : TBD	-	-		0.300	Aug 2024	0.000		-		0.000	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force			Date: March 2024
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0603742F / *Combat Identification Technology*	Project (Number/Name) 642597 / *Noncooperative Identification Subsystems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	9.763		15.713		18.306		-		18.306	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ECID MS&A	C/CPFF	ACC : Langley, AFB, VA	-	0.250		0.700		0.000		-		0.000	0.000	0.950	-
ATID/GTID MS&A	Various	Various : Various	-	0.000		0.400		0.500		-		0.500	0.000	0.900	-
ATID/GTID JMAC	C/Various	Various : Various	-	0.600		0.000		0.900		-		0.900	0.000	1.500	-
		Subtotal	-	0.850		1.100		1.400		-		1.400	0.000	3.350	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Data Collection	MIPR	TBD : TBD	-	0.400		1.152		1.360		-		1.360	0.000	2.912	-
		Subtotal	-	0.400		1.152		1.360		-		1.360	0.000	2.912	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AFRL PMA	Various	Various : Various, OH	-	0.600		0.500		0.891		-		0.891	0.000	1.991	0.000
Management Services	C/CPFF	TBD : TBD	-	-		0.100		-		-		-	0.000	0.100	-
		Subtotal	-	0.600		0.600		0.891		-		0.891	0.000	2.091	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force			Date: March 2024
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0603742F / *Combat Identification Technology*	Project (Number/Name) 642597 / *Noncooperative Identification Subsystems*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	11.613		18.565		21.957		-		21.957	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

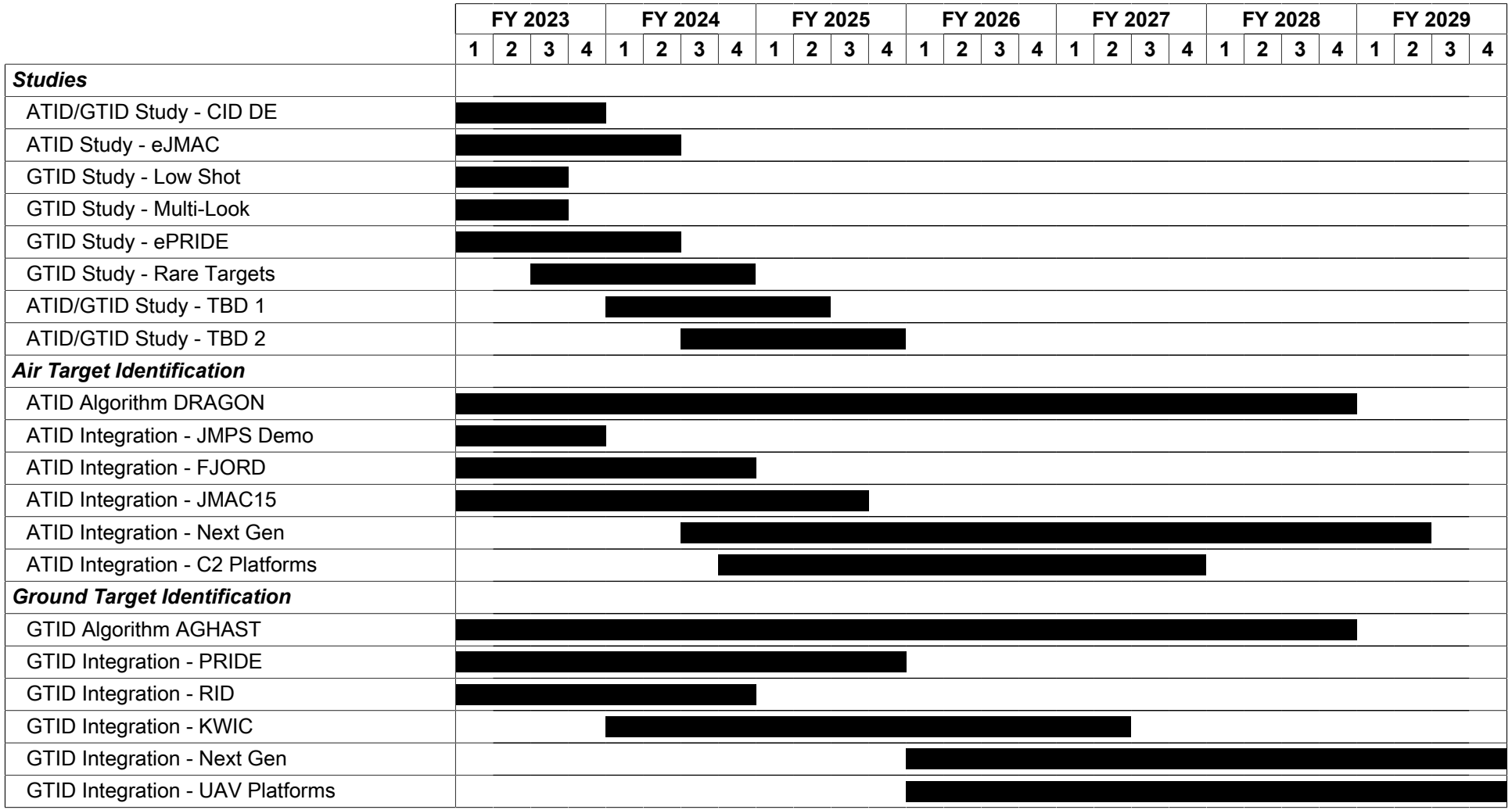

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Studies				
ATID/GTID Study - CID DE	1	2023	4	2023
ATID Study - eJMAC	1	2023	2	2024
GTID Study - Low Shot	1	2023	3	2023
GTID Study - Multi-Look	1	2023	3	2023
GTID Study - ePRIDE	1	2023	2	2024
GTID Study - Rare Targets	3	2023	4	2024
ATID/GTID Study - TBD 1	1	2024	2	2025
ATID/GTID Study - TBD 2	3	2024	4	2025
Air Target Identification				
ATID Algorithm DRAGON	1	2023	4	2028
ATID Integration - JMPS Demo	1	2023	4	2023
ATID Integration - FJORD	1	2023	4	2024
ATID Integration - JMAC15	1	2023	3	2025
ATID Integration - Next Gen	3	2024	2	2029
ATID Integration - C2 Platforms	4	2024	4	2027
Ground Target Identification				
GTID Algorithm AGHAST	1	2023	4	2028
GTID Integration - PRIDE	1	2023	4	2025
GTID Integration - RID	1	2023	4	2024
GTID Integration - KWIC	1	2024	2	2027
GTID Integration - Next Gen	1	2026	4	2029

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
GTID Integration - UAV Platforms	1	2026	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force			Date: March 2024
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0603742F / *Combat Identification Technology*	Project (Number/Name) 642599 / *Cooperative Identification Techniques*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
642599: *Cooperative Identification Techniques*	-	0.069	0.076	0.120	0.000	0.120	0.084	0.086	0.086	0.088	0.000	0.609
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Cooperative Combat Identification (CID) 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 recent major effort 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 Air Traffic Control Radar Beacon System (ATCRBS) Identification Friend or Foe (IFF) Mark XIIA/B System Program Office (AIMSPO) has system level interoperability testing and certification responsibilities for the present 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 AIMSPO 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). This project transitioned to PE 0207420F at the end of FY 2021; all FY 2022 and beyond funding for the maturation and fielding of the Mark IIB system (Mode 5 Level 2B) moved to the above PE. This Project (642599) is preserved to initiate work on a follow-on cooperative system (Mode 6), and as such will remain in PE 0603742F. Initial studies related to Mode 6 began in FY 2023

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Combat Identification capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.0M was expended for civilian pay expenses in this program element and in FY24 0.0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Cooperative Follow-on System	0.069	0.076	0.120
Description: Perform studies to identify potential paths foward for a new Idetification Friend or Foe (IFF) system. Evaluate weakness in the current Mode 5 Identification Friend or Foe (IFF) system to inform required research areas. Establish transition path for current production/support to next generation cooperative system or systems. Continue evaluation of technologies necessary to employ operational useful next generation cooperative identification systems in conjunction with current system.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642599 / *Cooperative Identification Techniques*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue studies for identifying the technologies necessary for next generation cooperative IFF. Initiate transition path planning for technology incorporation of USAF platforms. ***FY 2025 Plans:*** - Continue studies for identifying the technologies necessary for next generation cooperative IFF. - Continue transition path planning for technology incorporation of USAF platforms. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** - FY 2025 increased compared to FY 2024 by $0.044 million. Justification for this increase is described in plans above.			
Accomplishments/Planned Programs Subtotals	0.069	0.076	0.120

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Combat Identification develops technologies for exploitation by the United States Air Force (USAF) and other services. Award multiple, competitive contract vehicles emphasizing the use of government owned technologies, government off-the-shelf technology (GOTS), commercial off-the-shelf (COTS), and maximize the use of non-developmental items (NDIs). Management develops a technology to a point it can be demonstrated in a relevant operational environment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force			Date: March 2024
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0603742F / *Combat Identification Technology*	Project (Number/Name) 642599 / *Cooperative Identification Techniques*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development AFRL	C/Various	Not specified. : TBD	-	0.060	Apr 2023	0.065		0.103		-		0.103	Continuing	Continuing	-
		Subtotal	-	0.060		0.065		0.103		-		0.103	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Support	Various	Various : Various	-	0.009	Sep 2023	0.011		0.017		-		0.017	Continuing	Continuing	-
		Subtotal	-	0.009		0.011		0.017		-		0.017	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.069		0.076		0.120		-		0.120	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642599 / *Cooperative Identification Techniques*

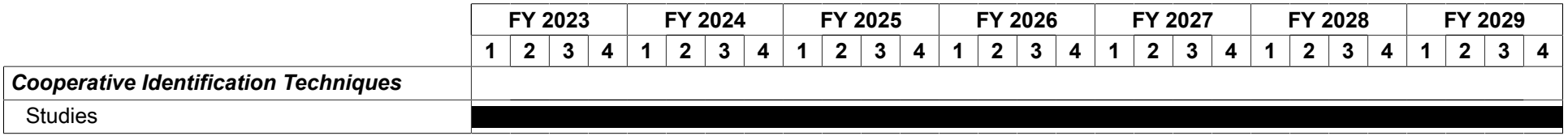

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642599 / *Cooperative Identification Techniques*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Cooperative Identification Techniques				
Studies	1	2023	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force			Date: March 2024
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0603742F / *Combat Identification Technology*	Project (Number/Name) 643420 / *Combat ID Database Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
643420: *Combat ID Database Development*	-	2.036	2.657	2.722	0.000	2.722	2.790	2.847	2.840	2.897	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Database Initiative (DBI) is a project designed to remove the "hard-coded" static identification (ID) parameters (typically updated every 4-5 years) from the host platform's sensor(s) and replace them with parameterized values that are more easily and rapidly updated when new intelligence inputs come available (this allows maximum flexibility to tailor each aircraft's Combat Identification (CID) database(s) based on assigned theater of operation, threat country of interest, and assigned mission tasks).

This project primarily consists of four objectives: A.) determining a sensor's capability to capture target features for CID, B) designing and developing a database to contain the CID features identified in Objective A, C) developing techniques to generate the requisite features, and D) provide CID features developed from measured or modeled data. This program element may include necessary civilian pay expenses required to manage, execute, and deliver Combat Identification technologies.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Combat Identification capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.0M was expended for civilian pay expenses in this program element and in FY24 0.0M is forecasted for civilian pay expenses in this program element.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Database Development	2.036	2.657	2.722
Description: Develop techniques to remove the "hard-coded" static ID parameters from the host platform's sensor and replace them with parameterized values that are dynamic. ***FY 2024 Plans:*** Continue collecting data to populate the databases for developmental test/debug. Continue developing techniques to remove the "hard-coded" static ID parameters from the host platform's sensor and replace them with parameterized values for Joint Multi-sensor Advanced Combat Identification (JMAC) architecture. Add additional supported sensor modalities into the JMAC architecture. ***FY 2025 Plans:*** - Continue collecting data to populate the databases for developmental test/debug.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 643420 / *Combat ID Database Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Continue developing techniques to remove the "hard-coded" static ID parameters from the host platform's sensor and replace them with parameterized values for Joint Multi-sensor Advanced Combat Identification (JMAC) architecture; adding additional supported sensor modalities into the JMAC architecture. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** - FY 2025 increased compared to FY 2024 by $0.065 million. Justification for this increase is described in plans above.			
Accomplishments/Planned Programs Subtotals	2.036	2.657	2.722

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Combat Identification develops technologies for exploitation by the United States Air Force (USAF) and other services. Implement end product investment in government organizations that will maintain database infrastructures and utilize information to inform combat identification (CID) across all USAF platforms. Use of competitive contract awards and existing contract vehicles emphasizing the use of government owned technologies, government off-the-shelf technology (GOTS), commercial off-the-shelf (COTS), and maximize the use of non-developmental items (NDIs). Management develops a technology to a point it can be demonstrated in a relevant operational environment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 643420 / *Combat ID Database Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Feature Development	Various	Various : Various	-	-		-		1.500		-		1.500	Continuing	Continuing	-
Database Development	MIPR	NASIC : WPAFB, OH	-	2.036		2.657		1.222		-		1.222	Continuing	Continuing	-
		Subtotal	-	2.036		2.657		2.722		-		2.722	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	2.036		2.657		2.722		-		2.722	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 643420 / *Combat ID Database Development*

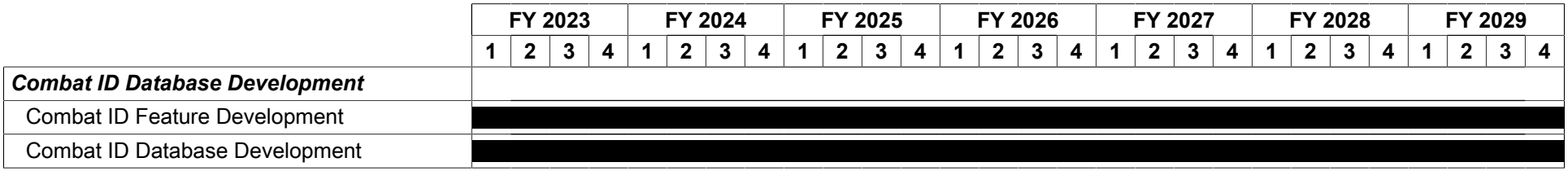

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 643420 / *Combat ID Database Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Combat ID Database Development				
Combat ID Feature Development	1	2023	4	2029
Combat ID Database Development	1	2023	4	2029