Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force											Date: February 2019	
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 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
Total Program Element	-	23.578	18.194	27.085	0.000	27.085	26.444	24.834	25.287	25.742	Continuing	Continuing
642597: *Noncooperative Identification Subsystems*	-	21.623	18.194	24.545	0.000	24.545	22.164	20.049	20.464	20.981	Continuing	Continuing
642599: *Cooperative Identification Techniques*	-	1.955	0.000	2.040	0.000	2.040	2.080	2.085	2.123	2.161	Continuing	Continuing
643420: *Combat ID Database Development*	-	0.000	0.000	0.500	0.000	0.500	2.200	2.700	2.700	2.600	Continuing	Continuing

Note

This program, BA 4, PE 0603742F, project 642597, Multi-Mode Ladar Aided Target Recognition (M2LATR), is a new start.

A. Mission Description and Budget Item Justification

Combat Identification (CID) is the process of determining the identity of an entity in the battlespace. It is essential to determine if that entity is a friend, neutral or enemy; and if an enemy, the nature of the entity determines how it should be engaged. The CID team's mission is to identify new and promising CID 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 PE aims to integrate and transition new capabilities into fielded systems, and improve existing capabilities. The mission area consists of two thrusts: cooperative CID and non-cooperative CID. Cooperative CID systems require communication between two participating platforms. Non-cooperative CID techniques do not depend on a response from the targeted platform - such as high range resolution radar that measures the length of a target. Both cooperative and non-cooperative CID techniques are currently in the field, and are necessary elements of the kill chain that ensure mission success and reduce fratricide.

Non-cooperative CID employs a number of sensing technologies and signal processing techniques. The observations are compared to a database to identify battlespace entities. These technologies include: (1) Laser Vision, an Electro-Optical/Infrared (EO/IR) imaging system that significantly increases ID ranges; (2) Hydra Vision, a balanced (robust) amalgamation of sensor data from multiple sources to provide warfighters with higher confidence CID results on surface or air targets, fusion to counter camouflage, concealment and deception (CCD), and multi-phenomenology features for sustainable databases; (3) Compact Aided Target Recognition (AiTR) and Sustainable Environments (CASE), a CID approach that focuses on tailoring algorithms to use smaller, more efficient databases that are faster and less expensive to generate and maintain; (4) Passive Radio Frequency (RF) ID Environment (PRIDE), a program to develop passive RF target ID capability for denied access environment using passive RF and electronic warfare (EW) information; (5) Radio ID (RID). a program to develop methods for using advances in digital radio technologies such as software defined radios to provide low cost ID solutions to enhance CID, improve aircrew situational awareness and assist in fratricide prevention with military and civil air platforms, potentially fusing non-cooperative techniques and cooperative technologies; and (6) Enhanced Combat ID (ECID), a program under Studies to develop a robust ability to quantitatively evaluate promising CID technologies using enhanced modeling and simulation (M&S) capabilities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force	Date: February 2019
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*

Cooperative Combat Identification (CID) employs technologies required to rapidly identify friendly platforms. The program develops, integrates and evaluates technologies that provide AF platforms with a means of positively identifying an air or ground platform as a friendly, via active or passive cooperative identification capabilities. 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 Combat ID (CID) Database Initiative (DBI) effort is a new project under the Combat Identification (CID) portfolio and is designed to remove the "hard-coded" static ID parameters from the host platform's sensor and replace them with parameterized values that are dynamic. The DBI project primarily consists of four efforts: a.) determining the requisite ID parameters for CID, b) designing and developing a database to contain the CID parameters identified in Task a, c) developing techniques to generate the requisite parameters, and d) provide CID parameters developed from measured or modeled data. This project is projected to begin in early FY-20 therefore no funds have been required/requested previously.

In FY20 our non-cooperative goals will be to complete the first transition of a feature-level fusion ATR capability for air targets onto F-16 AESA aircraft under Air to Air Hydravision, providing a substantial improvement in CID performance at long range. This effort will lead the way for other platforms to integrate this capability. AAHV will also transition a major improvement in air target CID to the F-15E AESA aircraft. CASE will be in the final demonstration phase of a significant ground target CID capability that will transition to F-15E AESA and F/A-18 AESA the following year. VAMP and 3DTO will both be preparing to transition CID capability to Litening in FY21. FY20 will see the initiation of three major programs, to include Integrated Determination of ID (ID2) - using advances associated with Joint Multisensor Advanced CID (JMAC) to provide feature-level fusion to ground target ID; Integrated Combat ID with EW (ICE), pulling EW-specific features into feature-level fusion; and Kill Chain Weapons Integrated CID (KWIC), using information from launched weapons through a back link to provide CID from within the hot battlespace.

In FY20 our cooperative goals will be to test and certify the responsibilities for the present Mark XII system, develop and integrate the new Mark XIIA (Mode 5) IFF system, and develop/integrate civil Mode S capabilities into Mark XIIA IFF equipment.

The FY20 DBI objectives are: a) determine the requisite CID features for HRR and NCTR and b) specify the requirements for initial database design, and finally c) collect initial sample data to populate the database for developmental test/debug. The benefit of using Mission Definable parameters is that they are dynamically developed and can be added, edited, or removed by preflight Mission Planning software such as the Joint Mission Planning System (JMPS).

FY20 will initiate a New Start called Multi-Mode Ladar Aided Target Recognition (M2LATR) which combines the work of 3DTO (3D laser imaging) and SIREN/VAMP (laser vibrometry) to create a longer-range fused-feature CID technique that uses the combined orthogonal features of both systems to provide a robust long-range CID capability. The Combat ID DBI Development effort is a new start in FY20.

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 technologies. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force	Date: February 2019
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*

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is $14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

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.

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	24.397	18.194	27.085	0.000	27.085
Current President's Budget	23.578	18.194	27.085	0.000	27.085
Total Adjustments	-0.819	0.000	0.000	0.000	0.000
• 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	-0.819	0.000	0.000	0.000	0.000

Change Summary Explanation

The FY19 funding request was reduced by $5.461M. Payback is planned for FY20 & FY21. This funding will enable the CID portfolio to continue developing critical CID technologies.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force			Date: February 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
642597: *Noncooperative Identification Subsystems*	-	21.623	18.194	24.545	0.000	24.545	22.164	20.049	20.464	20.981	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program, BA 4, PE 0603742F, project 642597, Multi-Mode Ladar Aided Target Recognition (M2LATR), is a new start.

A. Mission Description and Budget Item Justification

Non-cooperative CID employs a number of sensing technologies and signal processing techniques. The observations may be compared to a database of known objects to identify surface or air threats from air platforms. These technologies include: (1) Laser Vision, an Electro-Optical/Infrared (EO/IR) imaging system that significantly increases ID ranges; (2) Hydra Vision, a balanced (robust) amalgamation of sensor data from multiple sources to provide warfighters with higher confidence CID results on surface or air targets potentially including fusion with intelligence sources, identification of non-traditional targets, fusion to counter camouflage, concealment and deception (CCD), and multi-phenomenology features for sustainable databases; (3) Compact AiTR (Aided Target Recognition) and Sustainable Environments (CASE), a CID approach that focuses on tailoring algorithms to utilize smaller, more efficient databases that are faster and less expensive to generate and maintain; (4) Passive RF ID Environment (PRIDE), a program to develop passive RF target ID capability for denied access environment utilizing passive RF and EW information with potential non-traditional ISR capabilities; (5) Radio ID (RID) will develop methods for utilizing advances in digital radio technologies such as software defined radios, to provide low cost ID solutions to enhance Combat ID, improve aircrew situational awareness and assist in fratricide prevention with military and civil air platforms, potentially fusing non-cooperative techniques and cooperative technologies; and (6) Enhanced Combat ID (ECID), a program under Studies to develop a robust ability to quantitatively evaluate promising CID technologies using enhanced modeling and simulation (M&S) capabilities.

In FY20 our goal is to complete the first transition of a feature-level fusion ATR capability for air targets onto F-16 AESA aircraft under Air to Air Hydra vision, providing a substantial improvement in CID performance at long range. This effort will lead the way for other platforms to integrate this capability. AAHV will also transition a major improvement in air target CID to the F-15E AESA aircraft. CASE will be in the final demonstration phase of a significant ground target CID capability that will transition to F-15E AESA and F/A-18 AESA the following year. VAMP and 3DTO will both be preparing to transition CID capability to Litening in FY21. FY20 will see the initiation of three major programs, to include Integrated Determination of ID (ID2) - using advances associated with JMAC to provide feature-level fusion to ground target ID; Integrated Combat ID with EW (ICE), pulling EW-specific features into feature-level fusion; and Kill Chain Weapons Integrated CID (KWIC), using information from launched weapons through a back link to provide CID from within the hot battlespace.

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 technologies. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Laser Vision/VAMP	2.032	1.800	1.250	0.000	1.250
Description: The Vibrometry Advanced Mode Processor (VAMP) program develops advanced algorithms for processing data provided by laser vibrometry sensors to demonstrate prototype pilot Aided Target Recognition software. VAMP will leverage ability of active electro-optic sensors to sense micro-displacements of operating machinery to measure the resulting frequency spectrum. The program will assess utility for air-to-ground CID. FY19 - VAMP is conducting a data collection campaign to identify salient target features. FY20 - VAMP will apply AiTR algorithms to determine how well the technology can separate target classes. ***FY 2019 Plans:*** - Conduct MASINT flights to collect in-range vibrometry sensor data and associated meta data - Continue assessments of advanced algorithms for feature extraction and classifier functions - Update Interface Control Documents to latest vibrometer sensor revision level - Initiate vehicle database collection and associated software development - Perform ground/flight Testing ***FY 2020 Base Plans:*** Will work to complete testing and evaluations. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding decreased due to program being in final stages; therefore less funds will be needed to complete testing and documenting results.					
Title: Laser Vision/3-D Ladar	2.310	0.600	0.600	0.000	0.600
Description: Laser Vision is part of a family of electro-optical (EO) systems that significantly increase ID ranges. Provide the demonstration and evaluation data necessary to support decisions on future EO technologies supporting CID, including 3-D (3-dimensional) imaging laser radar (Ladar) and exploration of advanced concepts. The 3-D ladar technology provides a display of a 3-D EO image to the pilot for high confidence combat identification and is a potential for the next generation targeting pods for the USAF. ***FY 2019 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Conduct Algorithm development for 3D. ***FY 2020 Base Plans:*** Will continue Algorithm development for 3D. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding decreased due to program reaching completion.					
Title: Hydra Vision/Air to Air ***Description:*** Hydra Vision (Multi-Sensor Enhanced ID) is a balanced (robust) amalgamation of sensor data from multiple sources to provide warfighters with higher confidence CID results on surface or air targets. There are two main thrusts occurring simultaneously, Air-to-Air and Air-to-Ground. ***FY 2019 Plans:*** - Down select from FY18 phenomenology - Study and refine the most promising solutions - Adapt target recognition algorithms - Generate models and update database to incorporate information from chosen phenomenologies - Prepare for demonstration flights of developed technology ***FY 2020 Base Plans:*** - Will continue to generate models and update database information - Will examine all flight demonstrations of technology development ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increased due to efforts now moving to flight test and associated test costs.	4.076	3.400	5.144	0.000	5.144
Title: Hydra Vision/Air to Ground ***Description:*** Hydra Vision (Multi-Sensor Enhanced ID) is a family of balanced (robust) amalgamation of sensor data from multiple sources to provide warfighters with higher confidence CID results on surface or air targets.	0.384	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2019 Plans: Completed in FY18. ***FY 2020 Base Plans:*** N/A ***FY 2020 OCO Plans:*** N/A					
Title: Compact AiTR (Aided Target Recognition) and Sustainable Environment (CASE) ***Description:*** CASE is a family of efforts to address efficiency and sustainability issues associated with the development, operation and maintenance of non-cooperative AiTR technology. Develop sustainable multi-phenomenology AiTR based on low fidelity, compact, and inexpensive database technology. ***FY 2019 Plans:*** - Continue flight demo analysis ***FY 2020 Base Plans:*** - Will examine all flight demonstrations ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increased due to final test flights being conducted in FY20	2.664	2.200	2.695	0.000	2.695
Title: Passive RF ID Environment (PRIDE) ***Description:*** Develop passive RF target ID capability for denied access environment utilizing passive RF and EW information with potential non-traditional ISR capabilities. ***FY 2019 Plans:*** - Conduct Proof-of-concept on target platform to facilitate timely transition ***FY 2020 Base Plans:*** - Will continue developing techniques that will assist in the transitioning of ISR capabilities ***FY 2020 OCO Plans:***	6.305	3.050	5.547	0.000	5.547

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increased due to previous collection activity in FY19 being curtailed from overall PE budget cuts and effort will now resume additional bistatic data collection to enable validation of synthetic modeling techniques which will require additional funds in FY20.					
Title: Radio ID (RID) ***Description:*** RID will develop technologies to integrate radio based cooperative technologies with non-cooperative technologies into the cockpit. The benefits will be increased confidence target ID and situational awareness as well as reduced fratricides. ***FY 2019 Plans:*** - Conduct Risk Reduction, Initial Development, PDR, and Lab Demo ***FY 2020 Base Plans:*** - Will perform lab demonstrations - Will continue to develop integrative radio based cooperative technologies ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increased due to FY19 funds being lower because of reduced prior year funds and effort will now resume a more normal funding profile.	1.049	1.725	3.226	0.000	3.226
Title: Studies ***Description:*** Conduct CID-related studies/demos. ***FY 2019 Plans:*** - Develop architecture - Develop algorithm - Design system ***FY 2020 Base Plans:***	2.803	5.419	3.683	0.000	3.683

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
- Will continue to perform system designs and continue to develop algorithms. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding decreased due to programs having moved from a study phase during FY19 and will now transition to program activities (funding) on separate lines in FY20.					
Title: Multi-Mode Ladar Aided Target Recognition (M2LATR) ***Description:*** A New Start Program called Multi-Mode Ladar Aided Target Recognition (M2LATR), which combines the work of 3DTO (3D laser imaging) and SIREN/VAMP (laser vibrometry), to create a longer-range fused-feature CID technique that uses the combined orthogonal features of both systems to provide a robust long-range CID capability. ***FY 2019 Plans:*** N/A ***FY 2020 Base Plans:*** Will begin combining the orthogonal features of both the 3DTO and SIREN/VAMP to provide a robust long-range CID capability. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** This is an FY20 new start program.	0.000	0.000	2.400	0.000	2.400
Accomplishments/Planned Programs Subtotals	21.623	18.194	24.545	0.000	24.545

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Combat Identification develops technologies for exploitation by the USAF and other services.

Award multiple, competitive contract vehicles emphasizing off-the-shelf technology and maximizing the use of non-developmental items (NDIs).

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

Management develops a technology to a point it can be demonstrated in a relative combat environment.

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 2020 Air Force			Date: February 2019
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 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hydra Vision (Air-to-Air) - L	C/CPFF	Leidos : Reston, VA	-	0.900	Oct 2017	0.900	Oct 2018	1.000	Feb 2020	-		1.000	Continuing	Continuing	-
Hydra Vision (Air-to-Air) - N	C/CPFF	Northrop Grumman : Linthicum Heights, MD	-	0.965	Oct 2017	0.000	Oct 2018	0.000	Oct 2019	-		0.000	Continuing	Continuing	-
Hydra Vision (Air-to-Air) - R	C/CPFF	Raytheon Company : El Segundo, CA	-	1.084	Oct 2017	0.000	Jan 2019	0.000	Oct 2019	-		0.000	Continuing	Continuing	-
3-D Ladar	C/CPFF	Northrop Grumman : Rolling Meadows, IL	-	1.709	Dec 2017	0.000		0.000		-		0.000	Continuing	Continuing	-
Hydra Vision, Target Recognition & Tracking Technology/CASE-S	MIPR	Sandia : Albuquerque, NM	-	1.390	Mar 2018	0.660	Mar 2019	1.000	Oct 2019	-		1.000	Continuing	Continuing	-
Studies - ECID OMS SME	C/CPAF	Ball Aerospace : MD	-	0.100	Aug 2018	0.100	Dec 2018	0.100	Dec 2019	-		0.100	Continuing	Continuing	-
Software on Chip for Classification, Exploitation and Reconnaissance (SOCCER)	C/CPAF	AER : TBD	-	0.039	Jan 2018	0.000	Jan 2019	0.000		-		0.000	Continuing	Continuing	-
Studies - ECID	PO	AFIT : Dayton, OH	-	0.050	Jun 2018	0.055	Dec 2018	0.065	Dec 2019	-		0.065	Continuing	Continuing	-
Hydra Vision - Air to Ground - R	C/CPFF	Raytheon : ElSegundo, CA	-	-		0.000	Jan 2019	-		-		-	Continuing	Continuing	-
Hydra Vision - Air to Ground - L	C/CPAF	Leidos : McLean, VA	-	-		0.000	Jan 2019	-		-		-	Continuing	Continuing	-
Hydra Vision Ops Demo - B	C/CPAF	BAE : Dayton, OH	-	0.260	May 2018	0.000		-		-		-	Continuing	Continuing	-
CASE - Compact AiTR and Sustainable Environment Analysis - L	C/CPFF	Leidos : Mclean, VA	-	1.395	Nov 2017	1.200	Nov 2018	1.095	Oct 2019	-		1.095	Continuing	Continuing	-
Passive Radar Identification Environment (PRIDE) - L	C/CPFF	Leidos : Mclean, VA	-	3.275	Jan 2018	0.900	Jan 2019	1.000	Oct 2019	-		1.000	Continuing	Continuing	-
Passive Radar Identification Environment (PRIDE) -STR	C/CPFF	Systems and Technology Research : Woburn, MA	-	1.000	Jan 2018	0.900	Jan 2019	1.000	Oct 2019	-		1.000	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force			Date: February 2019
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 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Passive Radar Identification Environment (PRIDE) - IAI	C/CPFF	Integrated Applications Inc : Chantilly, VA	-	1.000	Jan 2018	0.900	Jan 2019	1.000	Oct 2019	-		1.000	Continuing	Continuing	-
Radio Identification (RID)	MIPR	DMEA : Sacramento, CA	-	1.049	Apr 2018	1.725	Feb 2019	3.226	Feb 2020	-		3.226	Continuing	Continuing	-
Alternate Band CID (ABC)	C/CPAF	Matrix : Dayton, OH	-	0.435	Jul 2017	0.000	Dec 2018	0.444	Dec 2019	-		0.444	Continuing	Continuing	-
M2LATR	C/CPFF	TBD : TBD	-	-		0.969	Aug 2019	2.400	Jan 2020	-		2.400	Continuing	Continuing	-
VAMP	C/CPAF	Northrop Grumman : Rolling Meadows, IL	-	1.138	Mar 2019	1.800	Feb 2019	1.250	Feb 2020	-		1.250	Continuing	Continuing	-
CLOVIS	C/CPAF	Not specified. : TBD	-	0.796	Mar 2018	-		-		-		-	Continuing	Continuing	-
Infoscitex	C/CPAF	Infoscitex : Dayton, OH	-	0.330	Jul 2018	0.450	Mar 2019	0.480	Mar 2020	-		0.480	Continuing	Continuing	-
PRECISE-N	C/CPAF	Northrop Grumman : Baltimore, MD	-	0.400	Sep 2018	1.000	Oct 2018	1.800	Oct 2019	-		1.800	Continuing	Continuing	-
PRECISE-R	C/CPAF	Raytheon : El Segundo, CA	-	0.100	Sep 2018	1.000	Nov 2018	2.000	Oct 2019	-		2.000	Continuing	Continuing	-
PRECISE-M	C/CPAF	Matrix : Dayton, OH	-	0.100	Sep 2018	0.500	Nov 2018	0.544	Nov 2019	-		0.544	Continuing	Continuing	-
ATISS	C/CPAF	Not specified. : TBD	-	0.030	Aug 2018	0.000		0.000		-		0.000	Continuing	Continuing	-
Wright State University	C/CPAF	Wright State Research : Dayton, OH	-	0.015	Aug 2018	0.000		0.000		-		0.000	Continuing	Continuing	-
CAST	MIPR	DMEA : Sacramento, CA	-	1.069	Sep 2018	1.000	Dec 2018	1.000	Dec 2019	-		1.000	Continuing	Continuing	-
Concept Call #1	C/CPAF	TBD : TBD	-	-		-		0.100	Nov 2019	-		0.100	Continuing	Continuing	-
Integrated Determination of IDs (ID2)	C/CPAF	TBD : TBD	-	-		-		0.283	Nov 2019	-		0.283	Continuing	Continuing	-
Integrated CID EW	C/CPAF	TBD : TBD	-	-		-		0.500	Dec 2019	-		0.500	Continuing	Continuing	-
Kill Chain Weapons Integrated CID	C/CPAF	TBD : TBD	-	-		-		0.679	Jan 2020	-		0.679	Continuing	Continuing	-
		Subtotal	-	18.629		14.059		20.966		-		20.966	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force			Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Support	MIPR	MITRE : Rome, NY	-	0.354	Mar 2018	0.350	Mar 2019	0.200	Dec 2019	-		0.200	Continuing	Continuing	-
X-Patch Bistatic Validation	C/CPAF	Leidos : Dayton, OH	-	0.300	Sep 2018	0.000		0.524		-		0.524	Continuing	Continuing	-
VAMP Support	C/CPAF	Not specified. : TBD	-	0.055		0.000		0.000		-		0.000	Continuing	Continuing	-
ECID MS&A	C/CPAF	TBD : TBD	-	-		0.500	Dec 2018	0.800	Dec 2019	-		0.800	Continuing	Continuing	-
		Subtotal	-	0.709		0.850		1.524		-		1.524	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PRIDE Data Collection	MIPR	46th Test Wing : Eglin AFB, FL	-	0.000	Feb 2018	0.200	Feb 2019	1.200	Dec 2019	-		1.200	Continuing	Continuing	-
Air-to-Air Hydra Vision Flight Test	MIPR	412 Test Wing : Edwards, CA	-	0.127	Oct 2017	0.000		0.000		-		0.000	Continuing	Continuing	-
AP Hill	C/CPAF	AP Hill : Ft AP Hill, VA	-	0.044	Aug 2018	0.000		0.000		-		0.000	Continuing	Continuing	-
Bistatic Data Collection	C/CPAF	University of Oklahoma : Tulsa, OK	-	0.070	Sep 2018	0.000	Aug 2019	0.000		-		0.000	Continuing	Continuing	-
		Subtotal	-	0.241		0.200		1.200		-		1.200	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AFRL PMA	MIPR	GSA : Denver, CO	-	1.044	Mar 2018	1.523	Mar 2019	0.600	Mar 2020	-		0.600	Continuing	Continuing	-
Systems Engineering Program Management (AIMSPO)-Mode 5 Level 2 B Cooperative	MIPR	DMEA : McClellan, CA	-	1.000	Jan 2018	0.375	Feb 2019	-		-		-	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force			Date: February 2019
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0603742F / *Combat Identification Technology*	Project (Number/Name) 642597 / *Noncooperative Identification Subsystems*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering Program Management (AIMSPO) Cooperative	MIPR	DTIC : Robins AFB, GA	-	0.000	Feb 2018	0.986	Feb 2019	0.255		-		0.255	Continuing	Continuing	-
Program Office Support Cooperative	Various	Various : Various	-	-		0.100	Oct 2018	-		-		-	Continuing	Continuing	-
Program Office Support DOD AIMS Process System (DAPS) data base Cooperative	MIPR	78ABW : Robins AFB, FM	-	-		0.101	Jun 2019	-		-		-	Continuing	Continuing	-
		Subtotal	-	2.044		3.085		0.855		-		0.855	Continuing	Continuing	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	21.623		18.194		24.545		-		24.545	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

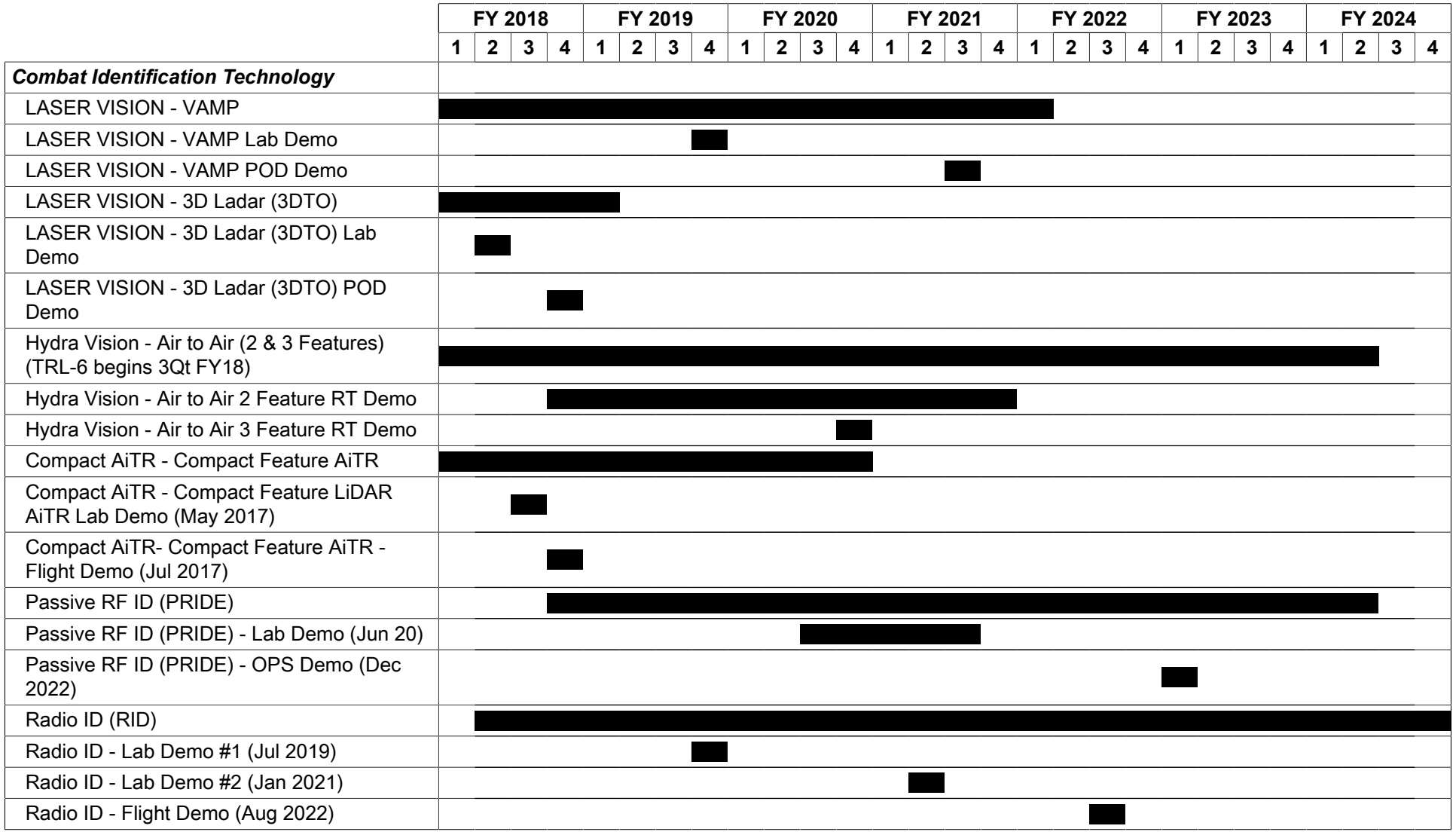

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

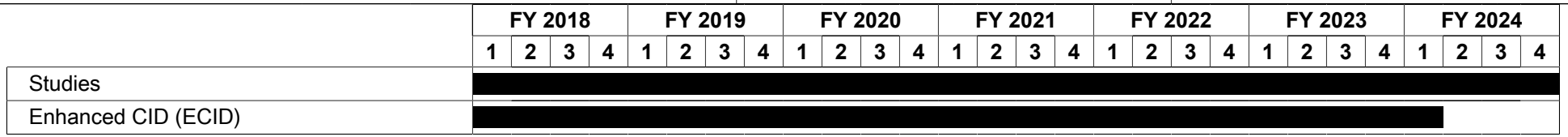

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642597 / *Noncooperative Identification Subsystems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Combat Identification Technology				
LASER VISION - VAMP	1	2018	1	2022
LASER VISION - VAMP Lab Demo	4	2019	4	2019
LASER VISION - VAMP POD Demo	3	2021	3	2021
LASER VISION - 3D Ladar (3DTO)	1	2018	1	2019
LASER VISION - 3D Ladar (3DTO) Lab Demo	2	2018	2	2018
LASER VISION - 3D Ladar (3DTO) POD Demo	4	2018	4	2018
Hydra Vision - Air to Air (2 & 3 Features) (TRL-6 begins 3Qt FY18)	1	2018	2	2024
Hydra Vision - Air to Air 2 Feature RT Demo	4	2018	4	2021
Hydra Vision - Air to Air 3 Feature RT Demo	4	2020	4	2020
Compact AiTR - Compact Feature AiTR	1	2018	4	2020
Compact AiTR - Compact Feature LiDAR AiTR Lab Demo (May 2017)	3	2018	3	2018
Compact AiTR- Compact Feature AiTR - Flight Demo (Jul 2017)	4	2018	4	2018
Passive RF ID (PRIDE)	4	2018	2	2024
Passive RF ID (PRIDE) - Lab Demo (Jun 20)	3	2020	3	2021
Passive RF ID (PRIDE) - OPS Demo (Dec 2022)	1	2023	1	2023
Radio ID (RID)	2	2018	4	2024
Radio ID - Lab Demo #1 (Jul 2019)	4	2019	4	2019
Radio ID - Lab Demo #2 (Jan 2021)	2	2021	2	2021
Radio ID - Flight Demo (Aug 2022)	3	2022	3	2022
Studies	1	2018	4	2024
Enhanced CID (ECID)	1	2018	1	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force			Date: February 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
642599: *Cooperative Identification Techniques*	-	1.955	0.000	2.040	0.000	2.040	2.080	2.085	2.123	2.161	Continuing	Continuing
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 AF 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 DoD International AIMS PO has system level interoperability testing and certification responsibilities for the present Mark XII system, development and integration of the new Mark XIIA (Mode 5) IFF system, and development/integration of civil Mode S capabilities into Mark XIIA IFF equipment. The AIMS PO ensures IFF equipment equipment/platform functionality IAW established standards and ensures total system interoperability to meet DoD/Service mission areas (e.g. Offensive Counter Air, Defensive Counter Air, and Integrated Air and Missile Defense). DoD International AIMS PO will continue to test and certify IFF equipment for the Services for as long as IFF is used for CID.

In FY20 our cooperative goals will be to test and certify the responsibilities for the present Mark XII system, develop and integrate the new Mark XIIA (Mode 5) IFF system, and also the development/integration of civil Mode S capabilities into Mark XIIA IFF equipment. The cooperative funds will be used to fund project and test engineers who will develop and test standards, perform certification testing in the field, process certifications and track all OSD/FAA guidelines to insure the program remains current. The OSD/FAA guidelines require Mode 5 be fully implemented by 2020 and the AIMS Program will insure those certifications are current on all applicable platforms/systems and work with both domestic and foreign military sales partners to insure compliance. The funds also support DOD representation to several military (US and NATO) and civil (FAA, ICAO and RTCA) requirements meetings for Mode 5, Mode S and ADS-B.

The FY19 funding request was reduced by $5.461M. Payback is planned for FY20 & FY21. This funding will enable the CID portfolio to continue developing critical CID technologies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Air Traffic Control and Radar Beacon Systems Identification Friend or Foe Mark XIIA System (AIMS) Program Office	1.955	0.000	2.040	0.000	2.040
Description: Develop and maintain technical standards on development, integration, testing, and certification of DoD IFF (Identification Friend or Foe) equipment. Coordinate and execute equipment/subsystem-level certifications and platform certifications of IFF capabilities (33 equipment and 84 platform certifications performed in FY17).					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Support Foreign Military Sales of U.S. IFF equipment. Support NATO IFF Capabilities Team (Mode 5 IFF 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 ID Number (PIN) assignments for every DoD platform using these waveforms in their interrogator and/or transponder equipment. ***FY 2019 Plans:*** - Continue to fund AIMS for interoperability IFF testing (civil and military), FAA liaison, to support of Mode 4 / Mode 5 equipment, updating and developing IFF standards. ***FY 2020 Base Plans:*** - Will continue to fund AIMS for interoperability IFF testing (civil and military), FAA liaison, to support of Mode 4 / Mode 5 equipment, updating and developing IFF standards. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increased due to realignment of funding between non cooperative and cooperative CID programs.					
Accomplishments/Planned Programs Subtotals	1.955	0.000	2.040	0.000	2.040

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• RDTE 04 0603742F: *Combat Identification Technology*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	0.000	0.000

Remarks

D. Acquisition Strategy

Combat Identification develops technologies for exploitation by the USAF 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.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642599 / *Cooperative Identification Techniques*

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 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642599 / *Cooperative Identification Techniques*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering / Program Management (AIMSPO)	MIPR	DTIC : Robins AFB, GA	-	1.308	Feb 2018	0.000	Feb 2019	1.750	Feb 2020	-		1.750	Continuing	Continuing	-
Systems Engineering/ Program Management (AIMSPO) - Mode 5 Level 2 B	MIPR	DMEA : McClellan, CA	-	0.182	Jan 2018	0.000	Feb 2019	0.000		-		0.000	Continuing	Continuing	-
		Subtotal	-	1.490		0.000		1.750		-		1.750	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Support	Various	Various : Various	-	0.172	Sep 2018	0.000	Sep 2019	0.125	Sep 2020	-		0.125	Continuing	Continuing	-
Program Office Support - DOD AIMS Process System (DAPS) data base	MIPR	78ABW : Robins AFB, GA	-	0.293	Dec 2017	0.000	Jul 2019	0.165	Jul 2020	-		0.165	Continuing	Continuing	-
		Subtotal	-	0.465		0.000		0.290		-		0.290	Continuing	Continuing	N/A

	Prior Years	FY 2018 Cost	FY 2018	FY 2019 Cost	FY 2019	FY 2020 Base Cost	FY 2020 Base	FY 2020 OCO Cost	FY 2020 OCO	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	1.955		0.000		2.040		-		2.040	Continuing	Continuing	N/A

Remarks

The FY19 funding request was reduced by $5.461M. Payback is planned for FY20 & FY21. This funding will enable the CID portfolio to continue developing critical CID technologies.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642599 / *Cooperative Identification Techniques*

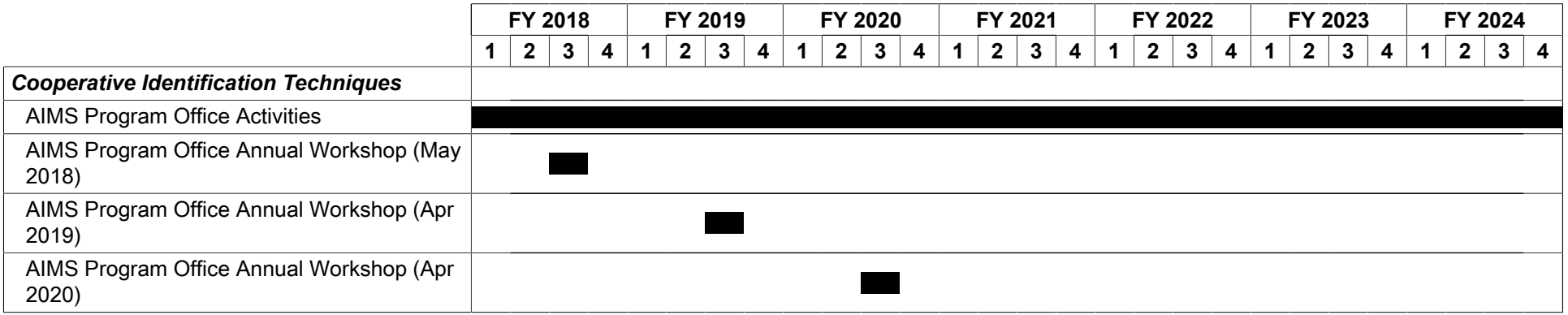

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 642599 / *Cooperative Identification Techniques*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Cooperative Identification Techniques				
AIMS Program Office Activities	1	2018	4	2024
AIMS Program Office Annual Workshop (May 2018)	3	2018	3	2018
AIMS Program Office Annual Workshop (Apr 2019)	3	2019	3	2019
AIMS Program Office Annual Workshop (Apr 2020)	3	2020	3	2020

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force			Date: February 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
643420: *Combat ID Database Development*	-	0.000	0.000	0.500	0.000	0.500	2.200	2.700	2.700	2.600	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Database Initiative (DBI) is a project, under the Combat Identification (CID) portfolio, designed to remove the "hard-coded" static ID parameters from the host platform's sensor and replace them with parameterized values that are dynamic. The DBI project primarily consists of four efforts: a.) determining the requisite ID parameters for CID, b) designing and developing a database to contain the CID parameters identified in Task a, c) developing techniques to generate the requisite parameters, and d) provide CID parameters developed from measured or modeled data.

This project is projected to begin in early FY-20 therefore no funds have been required/requested previously. The FY-20 objectives are: a.) determine the requisite CID features for HRR and NCTR and b) specify the requirements for initial database design, and finally c) collect initial sample data to populate the database for developmental test/debug. The benefit of using Mission Definable parameters is that they are dynamically developed and can be added, edited, or removed by preflight Mission Planning software such as the Joint Mission Planning System (JMPS). Current CID parameters for existing techniques, i.e. NCTR, are being developed faster than host platform OFPs. This leads to implementation lags as great as four years. By removing the "hard-coded" parameters from the sensors and enabling loading dynamic values via mission planning, the lag time could be reduced to days.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Database Development	-	0.000	0.500	-	0.500
Description: The Database Initiative (DBI) is a project, under the Combat Identification (CID) portfolio, designed to remove the "hard-coded" static ID parameters from the host platform's sensor and replace them with parameterized values that are dynamic.					
FY 2019 Plans: N/A					
FY 2020 Base Plans: This project is projected to begin in early FY-20 therefore no funds have been required/requested previously. The FY-20 objectives are: a.) determine the requisite CID features for HRR and NCTR and b) specify the requirements for initial database design, and finally c) collect initial sample data to populate the database for developmental test/debug.					
FY 2019 to FY 2020 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
This is a new start in FY20.					
Accomplishments/Planned Programs Subtotals	-	0.000	0.500	-	0.500

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• RDTE 04 0603742F: *Combat Identification Technology*	-	-	0.500	-	0.500	-	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Combat Identification develops technologies for exploitation by the USAF 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.

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 2020 Air Force		Date: February 2019
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 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Database Development	MIPR	NASIC : WPAFB, OH	-	-		-		0.500	May 2020	-		0.500	Continuing	Continuing	-
		Subtotal	-	-		-		0.500		-		0.500	Continuing	Continuing	N/A

	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.000		0.500		-		0.500	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 643420 / *Combat ID Database Development*

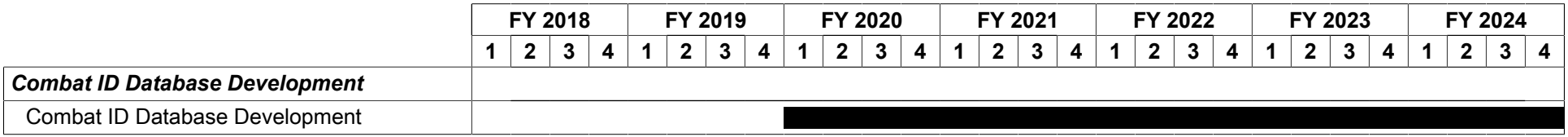

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0603742F / *Combat Identification Technology*	**Project (Number/Name)** 643420 / *Combat ID Database Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Combat ID Database Development				
Combat ID Database Development	1	2020	4	2024