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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 1203176F / <i>Combat Survivor Evader Locator</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	0.913	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
654522: <i>CSAR EMD</i>	-	0.913	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In FY 2021, funding in PE 1203176F, Combat Survivor Evader Locator is transferred to PE 0305176F, Combat survivor Evader Locator.

The Combat Survivor Evader Locator (CSEL) System provides aircrews with end-to-end global satellite secure emergency communication capability during combat and peace-time flying operations. CSEL provides a hand held radio as part of the mandatory aircrew survival gear. CSEL is a joint program (AF, Army, and Navy) and is the DoD program of record for personnel recovery survival radios. CSEL supports four of five Personnel Mission Phases: Report, Locate, Support, and Recover.

A National Security Agency (NSA) Cryptographic Modernization mandate and the Ultra High Frequency Follow-On satellite constellation are at the end of life and are driving upgrades to base stations. This effort includes development to modernize the system to integrate common waveforms, integrate broadcast reception for non-CSEL devices, provide for cryptographic modernization, leverage software defined capabilities based on the FY16 cryptographic study, and to procure intellectual property. CSEL will leverage software defined capabilities to replace the legacy handheld radio with a new device that supports report, locate, and recovery missions. The new device will leverage technological advancements and efficiencies to develop a more intuitive device that enables secure communication between the joint warfighter and rescue support teams. This funding will also be used to perform various studies and analysis in support of the CSEL Enterprise.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver CSEL capabilities. 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, 0605898F, and 0605833F.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.939	2.000	0.974	0.000	0.974
Current President's Budget	0.913	2.000	0.000	0.000	0.000
Total Adjustments	-0.026	0.000	-0.974	0.000	-0.974
• 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	-0.026	0.000			
• Other Adjustments	0.000	0.000	-0.974	0.000	-0.974

Change Summary Explanation

FY 2021: Funding transferred to PE 0305176F.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
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Title: CSEL Next Generation Cryptographic Architecture (NGCA)	0.913	1.000	0.000
Description: A NSA cryptographic modernization mandate and the Ultra High Frequency Follow-On satellite constellation at end of life are both driving upgrades to CSEL Base Stations and Interrogation Module.			
FY 2020 Plans: Complete NGCA Test & Evaluation (T&E).			
FY 2021 Plans: N/A			
FY 2020 to FY 2021 Increase/Decrease Statement: N/A			
Title: CSEL Next Generation Survival Communication Device	0.000	1.000	0.000
Description: A NSA cryptographic modernization mandate and the Ultra High Frequency Follow-On satellite constellation at end of life are both driving upgrades to 60,000 handheld CSEL rescue radios.			
FY 2020 Plans:			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Begin development of NGSCD			
<i>FY 2021 Plans:</i> N/A			
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> N/A			
Accomplishments/Planned Programs Subtotals	0.913	2.000	0.000

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 05 0305176F: <i>Combat Survivor Evader Locator</i>	-	-	0.973	-	0.973	-	-	-	-	0.000	0.973

Remarks
Funding for this effort transfers to PE 0305176F in FY2021.

E. Acquisition Strategy
The CSEL overall strategy is competition focused. The Technical Data Package is being acquired under the NGCA contract to allow future competition of the CSEL Enterprise. CSEL is furthering competition by partnering with Air Force Research Lab (AFRL). AFRL will develop a Next Gen Survival Communication Device to deliver an innovative materiel solution to the Joint Services. A modular solution requires engagement with multiple development partners to insert modern technologies compatible with a modernized CSEL System.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1203176F / <i>Combat Survivor Evader Locator</i>	Project (Number/Name) 654522 / <i>CSAR EMD</i>
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Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
AIRWorks Next Generation Cryptographic Architecture (NGCA) Support	MIPR	NAVAIR : Saint Inigoes, MD	-	0.539	Jun 2019	1.000	Dec 2019	-		-		-	Continuing	Continuing	-
Other Agency Support	MIPR	Various : TBD	-	0.020	Jul 2019	-		-		-		-	Continuing	Continuing	-
AFRL Device Support	TBD	AFRL : TBD	-	-		1.000	May 2020	-		-		-	Continuing	Continuing	-
Subtotal			-	0.559		2.000		-		-		-	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Combined Test	MIPR	Electronic Proving Grnds : Fort Huachuca, AZ	-	0.140	Mar 2019	-		-		-		-	Continuing	Continuing	-
JITC Testing	MIPR	JITC : Fort Huachuca, AZ	-	0.214	Aug 2019	-		-		-		-	Continuing	Continuing	-
Subtotal			-	0.354		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	
	Project Cost Totals		-	0.913	2.000	-	-	-	Continuing	Continuing

Remarks
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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1203176F / <i>Combat Survivor Evader Locator</i>	Project (Number/Name) 654522 / <i>CSAR EMD</i>

FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

CSEL Next Generation Cryptographic Architecture (NGCA)	
CSEL NGCA Test & Evaluation (T&E)	██████████
CSEL Next Generation Survival Communication Device (NGSCD)	
CSEL NGSCD Development	██████████

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1203176F / <i>Combat Survivor Evader Locator</i>	Project (Number/Name) 654522 / <i>CSAR EMD</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CSEL Next Generation Cryptographic Architecture (NGCA)				
CSEL NGCA Test & Evaluation (T&E)	4	2019	4	2020
CSEL Next Generation Survival Communication Device (NGSCD)				
CSEL NGSCD Development	2	2020	4	2020

Note

In FY 2021, funds transfer to PE 0305176F