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

Date: February 2019

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

3600: Research, Development, Test & Evaluation, Air Force I BA 5: System

PE 0604287F I Physical Security Equipment

Development & Demonstration (SDD)

,												
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	-	39.639	14.421	9.700	0.000	9.700	10.066	10.276	10.462	10.650	Continuing	Continuing
655120: Physical Security Equipment - SD ED	-	39.639	14.421	9.700	0.000	9.700	10.066	10.276	10.462	10.650	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Integrated Base Defense Security Systems (IBDSS) provides improvements and enhancements, demonstrates, and tests Physical Security Equipment (PSE) systems to include Force Protection. This program supports the protection of tactical, fixed, and nuclear weapons systems, AF personnel and AF facilities. The PSE program is organized to provide PSE RDT&E for Air Force specific needs but as a complement to, and in conjunction with, the PSE RDT&E programs funded by the DOD Physical Security Enterprise and Analysis Group (PSEAG). As such this program will obtain, demonstrate, and test PSE in the same manner and to the same standards and architecture as PSEAG-funded projects to ensure interoperability with PSEAG-developed PSE. In support of PSE, this RDT&E program includes spectrum planning for radio frequency (RF), communication security (cyber), information assurance requirements, integration and interoperability command control & communication (3) platform & components. This Program Element also includes funding for Force Protection Commercial Off The Shelf (FP COTS) market research, evaluation and testing. The FP COTS testing applies to all available technologies (delay, denial, detection, assessment, communication display, access control, power, mobility, and defeat effects) which are considered effective for AF physical security use. This program supports the maintenance and test support at Site C 3 and the Cold Weather Test Site (CWTS), as annotated in DoD Directive 3200.11, listing the 46th Test Wing (TW) as a Major Range and Test facility, conducting developmental and operational testing as the primary mission. Force Protection programs are inherently subject to rapid changes in the operational environment and will retain sufficient Program flexibility to meet changes in location, scope and capability in order to protect Air Force people, facilities and warfighting assets.

Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Emergent Operational Need (JEON) is a rapid acquisition and deployment capability existing of full kill (detect, track, assess and defeat with various capabilities (fixed, mobile, portable and hand-held.) It is a layered system-of-systems using COTS technologies, integrated via GOTS C2 system.

Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Urgent Operational Need (JUON) supports EUCOM JUON to protect specific strategic assets in overseas theaters of operation from the evolution of small unmanned aerial systems based on low cost, extensive proliferation, and availability in the commercial marketplace. FY17 is Overseas Contingency Operations (OCO) funding.

Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Urgent Operational Need (JUON)in support of the Combined Joint Task Force - Operations INHERENT RESOLVE in CENTCOM. This funding protects assets from the evolution of small UAS systems based on low cost, extensive proliferation and availability in the current market place.

Counter Small Unmanned Aerial Systems (Cs-UAS) protection capabilities at downward selected high priority sites.

PE 0604287F: Physical Security Equipment

Air Force

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

Appropriation/Budget Activity

3600: Research, Development, Test & Evaluation, Air Force I BA 5: System

Development & Demonstration (SDD)

Date: February 2019

R-1 Program Element (Number/Name)

PE 0604287F I Physical Security Equipment

Counter Small Unmanned Aerial Systems (Cs-UAS) protection capabilities for 7th Air Force Urgent Operational Need (UON)

Air Base Ground Defense (ABGD) will support all Development testing, Evaluation, Integration, Certification, and proof of concept for Tactical Automated Security Systems (TASS) and other tactical/expeditionary equipment that is required to provide robust force protection capabilities worldwide; flight-line security, aircraft, intelligence, surveillance, and reconnaissance assets, critical infrastructure, sustained sortie generation and air operations, advanced technology force multipliers to include: night vision and thermal imagery equipment, counter sniper/battery capabilities, ground weapons, target acquisition radar, inter operable tactical communications, [required C3 and protective standoff equipment for] wheeled tactical [non-tactical], armored [un-armored] vehicles, tactical sensors systems, integrated and interoperable command control & communication (3) platform & components, and unit/personnel protective field equipment. Additionally, ABGD will support all Development testing, Evaluation, Integration, Certification, and proof of concept for Technology Integration Management (TIM) and associated integration and interoperability efforts

This program element may include necessary civilian pay expenses required to manage, execute, and deliver these weapon system capabilities.

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 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.

B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	19.739	14.421	9.700	0.000	9.700
Current President's Budget	39.639	14.421	9.700	0.000	9.700
Total Adjustments	19.900	0.000	0.000	0.000	0.000
Congressional General Reductions	-0.011	-0.029			
 Congressional Directed Reductions 	0.000	0.000			
 Congressional Rescissions 	0.000	0.000			
Congressional Adds	19.900	0.000			
 Congressional Directed Transfers 	0.000	0.000			
Reprogrammings	0.000	0.000			
SBIR/STTR Transfer	0.000	0.000			
Other Adjustments	0.011	0.029	0.000	0.000	0.000

PE 0604287F: *Physical Security Equipment* Air Force

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Date: February 2019 Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force R-1 Program Element (Number/Name)

Appropriation/Budget Activity

3600: Research, Development, Test & Evaluation, Air Force I BA 5: System

Development & Demonstration (SDD)

PE 0604287F I Physical Security Equipment

Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2018	FY 2019
Project: 655120: Physical Security Equipment - SD ED		
Congressional Add: Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Urgent Operational Need (JUON)- EUCOM	1.000	0.000
Congressional Add: Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Urgent Operational Need (JUON) - CENTCOM	18.900	0.000
Congressional Add Subtotals for Project: 655120	19.900	0.000

Change Summary Explanation

FY 2018 MDAP Penalty reduction \$0.011M.

FY 2018 Congressional Add \$19.9M.

FY 2019 FY 2019 funds include \$0.029M withhold pending final determination of Penalty for Cost Overruns in accordance with PL 114-92 as amended by PL 115-91 section 825(a).

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2018	FY 2019	FY 2020
Title: IBDSS-1	9.239	9.421	0.000
Description: IBDSS (Integrated Base Defense Security Systems) qualifies, demonstrates, and tests Physical Security Equipment (PSE) systems to include Force Protection. This continuing effort was previously named Physical Security Equipment.			
FY 2019 Plans: Includes, but not limited to continuing Force Protection Commercial Off The Shelf (COTS) market research, evaluation and testing to address capability gaps and obsolescence. This includes integration and testing to qualify COTS equipment to provide essential upgrades/improvements and state-of the art technology to support integrated based security systems installations worldwide. Type of technologies includes delay/denial/detection/assessment/communication display/access control/power equipment & systems for IBDSS projects.			
Continue with previous integrated or modified COTS efforts to improve IBDSS physical security equipment.			
FY 2020 Plans: N/A			
FY 2019 to FY 2020 Increase/Decrease Statement: IBDSS-1 funding ends in FY19. FY20 is the start of IBDSS-2			
Title: IBDSS-2	0.000	0.000	9.700

PE 0604287F: Physical Security Equipment Air Force

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R-1 Line #78

Congressional Add Totals for all Projects

19.900

0.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force		Date: F	ebruary 2019)
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604287F I Physical Security Equipment	ı		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
Description: IBDSS-2 (Integrated Base Defense Security Systems) qualifies, equipment (PSE) systems to include Force Protection. This continuing effort we				
FY 2019 Plans: Includes, but not limited to continuing Force Protection Commercial Off The Sh testing to address capability gaps and obsolescence. This includes integration essential upgrades/improvements and state-of the art technology to support in worldwide. Type of technologies includes delay/denial/detection/assessment/cequipment & systems for IBDSS projects.	n and testing to qualify COTS equipment to provide tegrated based security systems installations			
Continue with previous integrated or modified COTS efforts to improve IBDSS	physical security equipment.			
FY 2020 Plans: IBDSS (Integrated Base Defense Security Systems) qualifies, demonstrates, a systems to include Force Protection. This continuing effort was previously nan				
Includes, but not limited to continuing Force Protection Commercial Off The Sh testing to address capability gaps and obsolescence. This includes integration essential upgrades/improvements and state-of the art technology to support intworldwide. Type of technologies includes delay/denial/detection/assessment/ceequipment & systems for IBDSS projects.	n and testing to qualify COTS equipment to provide tegrated based security systems installations			
Continue with previous integrated or modified COTS efforts to improve IBDSS	physical security equipment			
FY 2019 to FY 2020 Increase/Decrease Statement: FY20 is the start of IBDSS-2				
Title: Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Emergent Ope	erational Need (JEON) - STRATCOM	9.163	0.000	0.000
Description: Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Emerg and deployment capability existing of full kill (detect, track, assess and defeat v hand-held.) It is a layered system-of-systems using COTS technologies, integral	with various capabilities (fixed, mobile, portable and			
FY 2019 Plans:				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force		Date: F	ebruary 2019)
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604287F / Physical Security Equipment			
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
N/A: no out year funding.				
FY 2020 Plans: N/A				
FY 2019 to FY 2020 Increase/Decrease Statement: N/A				
Title: Counter Small Unmanned Aerial Systems (Cs-UAS) Urgent Operational	Need (UON) - 7th Air Force	1.337	0.000	0.000
Description: Delivering rapid acquisition and deployment capability of COTS/evolution of counter small unmanned aerial systems (Cs-UAS) in the pacific the				
FY 2019 Plans: N/A: no out year funding.				
FY 2020 Plans: N/A				
FY 2019 to FY 2020 Increase/Decrease Statement: N/A				
Title: Counter Small Unmanned Aerial System (Cs-UAS) protection capabilities	es at downward selected high priority sites.	0.000	5.000	0.000
Description: Counter Small Unmanned Aerial System (Cs-UAS) protection ca	apabilities at downward selected high priority sites.			
FY 2019 Plans: Plans include but are not limited to:				
Development of Medusa cloud computing and distributed support infrastructure continuing to integrate and field COTS/GOTS components to meet C-sUAS re				
FY 2020 Plans: N/A				
FY 2019 to FY 2020 Increase/Decrease Statement: N/A				
	Accomplishments/Planned Programs Subtotals	19.739	14.421	9.700

PE 0604287F: *Physical Security Equipment* Air Force

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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	
3600: Research, Development, Test & Evaluation, Air Force I BA 5: System	PE 0604287F I Physical Security Equipment	
Development & Demonstration (SDD)		

	FY 2018	FY 2019
Congressional Add: Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Urgent Operational Need (JUON)- EUCOM	1.000	0.000
FY 2018 Accomplishments: Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Urgent Operational Need (JUON) supports EUCOM JUON to protect specific strategic assets in overseas theaters of operation from the evolution of small unmanned aerial systems based on low cost, extensive proliferation, and availability in the commercial marketplace.		
FY 2019 Plans: N/A: no out year funding.N/A: no out year funding.		
Congressional Add: Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Urgent Operational Need (JUON) - CENTCOM	18.900	0.000
FY 2018 Accomplishments: Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Urgent Operational Need (JUON) in support of the Combined Joint Task Force - Operations INHERENT RESOLVE in CENTCOM. This funding protects assets from the evolution of small UAS systems based on low cost, extensive proliferation and availability in the current market place.		
FY 2019 Plans: N/A: no out year funding.		
Congressional Adds Subtotals	19.900	0.000

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

			FY 2020	FY 2020	FY 2020					Cost To	
<u>Line Item</u>	FY 2018	FY 2019	Base	000	<u>Total</u>	FY 2021	FY 2022	FY 2023	FY 2024	Complete	Total Cost
 OPAF 03 Line Item 29: Base 	166.437	92.679	76.406	-	76.406	50.241	-	-	-	Continuing	Continuing
Physical Security Systems											

Remarks

Air Force

E. Acquisition Strategy

AFSFC and Force Protection program office investigates requirements to include new and/or obsolete items. COTS sub-systems, equipment and components are competitively acquired from industry after thorough market research. Equipment for testing is purchased via competitive selection processes via direct purchase orders. For security systems COTS that are required to be qualified for nuclear security environments where industry COTS sources may not be mature, consideration is given to replacement of new items or modification of COTS through the competitive selection procedure as well.

Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Emergent Operational Need (JEON). The Force Protection program office is acquiring COTS sub-systems and equipment for DT/OT as well as minor development of an existing C2 System for integration.

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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 I BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604287F / Physical Security Equipment	
Counter Small Unmanned Aerial Systems (Cs-UAS) Joint Urgent Operational equipment in support of EUCOM JUON for DT/OT as well as minor development		acquiring COTS sub-systems and
Delivery Orders on Indefinite Delivery/Indefinite Quantity contract vehicles or	other approved purchase methods are utilized to acqu	ire equipment.
F. Performance Metrics Please refer to the Performance Base Budget Overview Book for information Force performance goals and most importantly, how they contribute to our mi		e resources are contributing to Air

PE 0604287F: *Physical Security Equipment* Air Force

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

Date: February 2019

Appropriation/Budget Activity

3600 / 5

R-1 Program Element (Number/Name)

Project (Number/Name)

PE 0604287F I Physical Security Equipment 655120 I Physical Security Equipment - SD

ED

Product Developmer	roduct Development (\$ in Millions)			FY 2018 F		FY 2			2020 FY 2020 Base OCO			FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
Integrated Base Defense Security Systems (IBDSS-1)	Various	Various : Various	-	1.770		3.513		-		-		-	Continuing	Continuing	-
Integrated Base Defense Security Systems (IBDSS-2)	Various	Various : Various	-	-		-		6.995		-		6.995	Continuing	Continuing	-
Counter Small Unmanned Aerial Systems (CsUAS) Joint Emergent Operational Need (JEON) STRATCOM	Various	Various : Various	-	4.017		-		-		-		-	Continuing	Continuing	-
Counter Small Unmanned Aerial Systems (CsUAS) Joint Urgent Operational Need (JUON) EUCOM	MIPR	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Counter Small Unmanned Aerial Systems (CsUAS) Joint Urgent Operational Need (JUON) CENTCOM	Various	Various : Various	-	13.932		-		-		-		-	Continuing	Continuing	-
Counter Small Unmanned Aerial System (CsUAS) Urgent Operational Need (UON) 7th Air Force	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Counter Small Unmanned Aerial System (Cs-UAS) protection capabilities at downward selected high priority sites	Various	Various : Various	-	-		3.579		-		-		-	Continuing	Continuing	-
		Subtotal	-	19.719		7.092		6.995		-		6.995	Continuing	Continuing	N/A

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Air Force

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Date: February 2019 Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force

Appropriation/Budget Activity

3600 / 5

R-1 Program Element (Number/Name) PE 0604287F I Physical Security Equipment | 655120 l Physical Security Equipment - SD

Project (Number/Name)

ED

Support (\$ in Millions)			FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Base Defense Security Systems (IBDSS-1)	Various	Various : Various	-	1.975		2.135		-		-		-	Continuing	Continuing	, -
Integrated Base Defense Security Systems (IBDSS-2)	Various	Various : Various	-	-		-		1.905		-		1.905	Continuing	Continuing	-
Counter Small Unmanned Aerial Systems (CsUAS) Joint Urgent Operational Need (JUON) CENTCOM	Various	Various : Various	-	4.968		-		-		-		-	Continuing	Continuing	-
Counter Small Unmanned Aerial Systems (CsUAS) Urgent Operational Need (UON) 7th Air Force	MIPR	Various : Various	-	1.337		-		-		-		-	Continuing	Continuing	-
		Subtotal	-	8.280		2.135		1.905		-		1.905	Continuing	Continuing	N/A

Remarks

The support funding is planned at the above amounts. If the support contracts are less, the available funds will be transitioned to the Product Development line.

Test and Evaluation	(\$ in Milli	ons)		FY 2	2018	FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
Integrated Base Defense Security Systems (IBDSS-1)	PO	TAC-3 : Eglin, FL	-	5.495		3.773		-		-		-	Continuing	Continuing	-
Integrated Base Defense Security Systems (IBDSS-2)	Various	Various : Various	-	-		-		0.800		-		0.800	Continuing	Continuing	-
Counter Small Unmanned Aerial Systems (CsUAS) Joint Emergent Operational Need (JEON) STRATCOM	РО	TAC-3 : Eglin, FL	-	5.145		-		-		-		-	Continuing	Continuing	-

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Air Force

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

Appropriation/Budget Activity
3600 / 5

R-1 Program Element (Number/Name)
PE 0604287F / Physical Security Equipment 655120 / Physical Security Equipment - SD ED

Test and Evaluation	(\$ in Milli	ons)		FY 2	:018	FY 2	019	FY 2 Ba			2020 CO	FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Counter Small Unmanned Aerial Systems (CsUAS) Joint Urgent Operational Need (JUON) EUCOM	РО	Various : Various	-	1.000		-		-		-		-	Continuing	Continuing	-
Counter Small Unmanned Aerial Systems (Cs-UAS) protection capabilities at downward selected high priority sites	Various	Various : Various	-	-		1.421		-		-		-	Continuing	Continuing	j -
		Subtotal	-	11.640		5.194		0.800		-		0.800	Continuing	Continuing	N/A
			Prior			-		FY 2	2020	EV.	2020	FY 2020	Cost To	Total	Target

	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	-	39.639	14.421	9.700	-	9.700	Continuing	Continuing	N/A

Remarks

Various delivery orders will be awarded through out the fiscal year for numerous projects.

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xhibit R-4, RDT&E Schedule Profile: PB 2020	Air F	orce																				Dat	e: F	ebru	ary	2019)	
Appropriation/Budget Activity 3600 / 5						R-1 Program Element (Number/Name) PE 0604287F / Physical Security Equipment 655120 / ED										•	Number/Name) Physical Security Equipment						nt -					
		FY 2018 FY		2019	9 FY 20		202)	FY 2021		1	FY		2022		FY		2023		FY 2		2024						
	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
FY19 Events			,			,				,	'															,		
Integrated Base Defense Security Systems (IBDSS-1)													I															
FY20 Events																												
Integrated Base Defense Security Systems (IBDSS-2)																												

PE 0604287F: *Physical Security Equipment* Air Force

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force			Date: February 2019
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604287F I Physical Security Equipment	- 3 (umber/Name) Physical Security Equipment - SD

Schedule Details

	St	art	Eı	nd
Events by Sub Project	Quarter	Year	Quarter	Year
FY19 Events				
Integrated Base Defense Security Systems (IBDSS-1)	1	2018	4	2020
FY20 Events				
Integrated Base Defense Security Systems (IBDSS-2)	1	2020	4	2022

PE 0604287F: *Physical Security Equipment* Air Force

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