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

Date: February 2018

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

3600: Research, Development, Test & Evaluation, Air Force I BA 7:

PE 0303131F I Minimum Essential Emergency Communications Network (MEECN)

Operational Systems Development

COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	40.099	48.841	99.088	0.000	99.088	65.839	91.814	51.466	9.643	Continuing	Continuing
672832: MEECN System Improvements	-	13.572	0.923	25.942	0.000	25.942	0.948	0.966	0.987	1.005	Continuing	Continuing
672835: Common VLF/LF Receiver Inc 2	-	4.310	22.526	9.559	0.000	9.559	29.683	82.499	50.463	8.628	Continuing	Continuing
676029: Global Aircrew Strategic Network Terminal	-	18.463	10.026	14.692	0.000	14.692	0.000	0.001	0.000	0.000	Continuing	Continuing
676030: Global ASNT Inc 2	-	3.754	15.366	48.895	0.000	48.895	35.208	8.348	0.016	0.010	Continuing	Continuing

#### Note

Nuclear Command, Control, and Communications (NC3) Dem/Val, is an FY19 new start (\$25.012M), to be executed in the MEECN System Improvements (MSI) Program 0303131F, Project 672832. In FY20, NC3 Dem/Val efforts will be transferred to Program 0604001F, Project 646020, in order to provide greater transparency.

# A. Mission Description and Budget Item Justification

Nuclear Deterrence Operations (NDO) is an Air Force Core Function. Within this core function, Nuclear Command and Control (NC2) is the exercise of authority and direction by the President, as Commander in Chief, through established command lines, over nuclear weapon operations of military forces. The President's authority and direction are exercised through the Nuclear Command and Control System (NCCS). The NCCS is the designated combination of flexible and enduring elements including facilities, equipment, communications, procedures, personnel, and the structure in which these elements are integrated, all of which are essential for planning, directing, and controlling nuclear weapon operations.

The MEECN portfolio modernizes the systems necessary to effectively provide assured communications connectivity between the President and the strategic deterrence forces in stressed environments.

MSI is a long-range planning process with users (Air Force Global Strike Command (AFGSC), Air Combat Command (ACC), Air Force Space Command (AFSPC), Air Mobility Command (AMC), Air Force Special Operations Command (AFSOC), US Strategic Command (USSTRATCOM), and the Navy) to monitor and assess the performance of NC3 systems and develop recommendations for current and future strategic and tactical architectures, requirements, and issues based on available and emerging technologies. MSI is used to conduct technology testing; analyze technology strategies; conduct requirement trade space analysis, technology maturation and risk reduction efforts, and mission analysis; and build technology Roadmaps as proactive support to the NC3

NC3 Dem/Val is required for advanced concept development and prototyping of next generation NC3 systems. This program ensures a responsive design and development engineering infrastructure to address evolving Nuclear Deterrence Operations mission requirements, emerging issues and technology insertion/technology

PE 0303131F: Minimum Essential Emergency Communicatio...
Air Force

community. MSI performs analysis, integration, and testing activities for the NC3 Weapon System.

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

Date: February 2018

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development

PE 0303131F I Minimum Essential Emergency Communications Network (MEECN)

application on the NC3 Weapon System, future strategic systems/capability, and other common strategic areas where appropriate, and develop enhanced multi-use capabilities. The NC3 Dem/Val Program will provide technology maturation and risk reduction activities to support the NC3 Weapon System (AN/USQ-225). Activity will reduce life cycle costs, inform technology maturation & risk reduction efforts, improve system performance, mitigate evolving threats, and ensure both viability and durability of the NC3 Weapon System.

Common Very Low Frequency/Low Frequency (VLF/LF) Receiver (CVR) Increment 2 (CVR Inc. 2) will deliver a survivable, beyond-line-of-sight path for Emergency Action Message (EAM) reception. The intent of CVR Inc. 2 is to develop and produce a common VLF/LF receiver, capable of implementing an interoperable waveform, to integrate into current and future airborne and ground based platforms, improve system performance, and reduce supportability costs through commonality. The program will also lead the development of the Uniform MEECN Mode (UMM) waveform expected to be used by the United States' Air Force and Navy.

Global Aircrew Strategic Network Terminal (Global ASNT) replaces inadequate, unsustainable strategic communications equipment at bomber, tanker and reconnaissance Wing Command Posts (WCPs), Nuclear Task Forces, Munitions Support Squadrons (MUNSS), and for Mobile Support Teams (MSTs). Global ASNT is a ground-based system that will provide survivable, secure communication paths to receive Emergency Action Messages (EAMs), Force Management messages, and Force Direction messages and disseminate them to bomber, tanker, and reconnaissance aircrews.

Global ASNT is being fielded in separate capability increments. Global ASNT Increment 1 (Inc. 1) includes early system engineering support for the planning and development for the future Global ASNT Increments.

Global ASNT Inc. 1 fields required Extremely High Frequency/Advanced Extremely High Frequency (EHF/AEHF) capabilities and replaces inadequate, unsustainable strategic mobile and fixed-site Single Channel Anti-jam Man-Portable (SCAMP) terminals and Secure, Mobile, Anti-Jam, Reliable, Tactical - Terminal (SMART-T) equipment.

Global ASNT Increment 2 delivers a replacement Aircrew Alerting System (AAS) consisting of personal and general alerting equipment, and High Frequency (HF) and Ultra High Frequency (UHF) capabilities. Increment 2 replaces inadequate, unsustainable Electromagnetic Pulse Hardened Dispersal Communication (EHDC) systems and Aircrew Alerting Communications Electromagnetic Pulse (AACE) systems.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver nuclear weapon support 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, 0605833F.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal years.

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

Date: February 2018

## Appropriation/Budget Activity

R-1 Program Element (Number/Name)

3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development

PE 0303131F I Minimum Essential Emergency Communications Network (MEECN)

B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	47.471	48.841	82.603	0.000	82.603
Current President's Budget	40.099	48.841	99.088	0.000	99.088
Total Adjustments	-7.372	0.000	16.485	0.000	16.485
<ul> <li>Congressional General Reductions</li> </ul>	0.000	0.000			
<ul> <li>Congressional Directed Reductions</li> </ul>	-9.372	0.000			
<ul> <li>Congressional Rescissions</li> </ul>	0.000	0.000			
<ul> <li>Congressional Adds</li> </ul>	0.000	0.000			
<ul> <li>Congressional Directed Transfers</li> </ul>	0.000	0.000			
<ul> <li>Reprogrammings</li> </ul>	2.000	0.000			
SBIR/STTR Transfer	0.000	0.000			
Other Adjustments	0.000	0.000	16.485	0.000	16.485

## **Change Summary Explanation**

FY 2017 PB Congressional Mark (-\$7.3M) Excess funds; FFRDC Reductions (Section 8024(f))(-\$0.714M); Below Threshold Reprogramming (+\$2.0M); Small Business Innovation Adjustment (\$-1.358M)

FY 2019 PB MSI NC3 Dem/Val increase (+\$25.012M); CVRi2 Rephase to align with program execution(-\$55.143M); ASNTi1 increase to mitigate CCD Re-Validation issues(+\$14.530M); ASNTi2 increase for continuation of EMD phase(+32.093M)

Exhibit R-2A, RDT&E Project Ju	ıstification	: PB 2019 A	Air Force							Date: Febr	ruary 2018	
Appropriation/Budget Activity 3600 / 7					PE 030313	31F I Minim	t (Number/ um Essentia cations Net	al ,	Project (N 672832 / N		ne) tem Improve	ements
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
672832: MEECN System Improvements	-	13.572	0.923	25.942	0.000	25.942	0.948	0.966	0.987	1.005	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

#### **Note**

Nuclear Command, Control, and Communications (NC3) Dem/Val, is an FY19 new start (\$25.2M), to be executed in the MEECN System Improvements (MSI) line Program 0303131F, Project 672832. In FY20, NC3 Dem/ Val efforts will be transferred to Program 0604001F, Project 646020, in order to provide greater transparency.

## A. Mission Description and Budget Item Justification

MSI is a long-range planning process with users (Air Force Global Strike Command (AFGSC), Air Combat Command (ACC), Air Force Space Command (AFSPC), Air Mobility Command (AMC), Air Force Special Operations Command (AFSOC), US Strategic Command (USSTRATCOM), and the Navy) to monitor and assess the performance of NC3 systems and develop recommendations for current and future strategic and tactical architectures, requirements, and issues based on available and emerging technologies. MSI is used to conduct technology testing; analyze technology strategies; conduct requirement trade space analysis, technology maturation and risk reduction efforts, and mission analysis; and build technology roadmaps as proactive support to the NC3 enterprise. MSI performs analysis, integration, and testing activities for the NC3 Weapon System.

NC3 Dem/Val is required for advanced concept development and prototyping of next generation NC3 systems. This program ensures a responsive design and development engineering infrastructure to address evolving NDO mission requirements, emerging issues and technology insertion/technology application on the NC3 Weapon System, future strategic systems/capability, and other common strategic areas where appropriate, and develop enhanced multi-use capabilities. The NC3 Dem/Val Program will provide technology maturation and risk reduction activities to support the NC3 Weapon System (AN/USQ-225). Activity will reduce life cycle costs, inform technology maturation & risk reduction efforts, improve system performance, mitigate evolving threats, and ensure both viability and durability of the NC3 Weapon System.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2017	FY 2018	FY 2019
Title: MEECN System Improvements	13.572	0.923	25.942
<b>Description:</b> Conduct NC3 technology testing, integrate the NC3 Weapon System, build comprehensive technology strategies and roadmaps. Conduct VLF/LF tradeoff analysis. Deliver results of analytic tasks in an annual NC3 report.			
NC3 Dem/Val activities will include but not limited to; conducting studies, analysis, and prototyping; test bed activities; exercise participation; developing modeling and simulation of identified NC3 WS architecture; integrated NC3 WS testing, validation, and certification; and direct mission support contracts in support of the above.			

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: F	ebruary 2018	3
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0303131F I Minimum Essential Emergency Communications Network (MEECN)	ct (Number/ 32 / MEECN	,	ovements
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019
FY 2018 Plans: Continue to refresh NC3 Architecture Roadmap Complete NC3 Annual Report - FY18				
FY 2019 Plans: Continue to refresh NC3 Architecture Roadmap Complete NC3 Annual Report - FY19 Begin design and development engineering Perform analysis of engineering issues and technology insertion				

# C. Other Program Funding Summary (\$ in Millions)

FY 2018 to FY 2019 Increase/Decrease Statement:

FY19 increase of \$25.012M for NC3 Dem/Val

Conduct technology maturation and risk reduction activities

Evaluate integrated technology, representative modes, and prototype systems

Develop enhanced multiuse capabilities

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N/A

### **Remarks**

# D. Acquisition Strategy

MSI will continue to evaluate the performance of the NC3 Weapon System, by assessing performance and technology areas for improvement with the assistance of expert technical support from FFRDCs, UARCs, and may include competitively awarded technical support contracts with industry. Johns Hopkins University/Applied Physics Laboratory will support NC3 Weapon System Architecture Roadmap updates.

To conduct NC3 Dem/Val essential activities a combination of competitively awarded contracts, as well as sole source contracts, may be used to augment AF organic capabilities with technical skill sets from FFRDCs, UARCs, and industry Advisory and Assistance Services (A&AS) providers.

#### **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.

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**Accomplishments/Planned Programs Subtotals** 

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Exhibit R-3, RDT&E	Project C	ost Analysis: PB 2	2019 Air F	orce								Date:	February	2018	
Appropriation/Budge 3600 / 7	et Activity	1				PE 030	3131F I M ency Com	1inimum i	lumber/Na Essential ons Netwo	,		(Number		Improven	nents
Product Developme	nt (\$ in M	illions)		FY 2	2017	FY 2	2018		2019 ase	FY 2	2019 CO	FY 2019 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 o Contrac
MSI - NC3 Roadmap	MIPR	JHU APL : Laurel, MD	-	0.594	Oct 2017	0.690	Oct 2018	0.460	Oct 2019	-		0.460	Continuing	Continuing	-
NC3 Dem/Val	TBD	Various : Various	-	-		-		25.012	Feb 2019	-		25.012	Continuing	Continuing	-
NC3 Integration (FFRDC)	TBD	Various : Various	-	8.000	Apr 2018	-		-		-		-	Continuing	Continuing	-
Global Assured Comm	MIPR	Various : Various	-	2.000	Apr 2018	-		-		-		-	Continuing	Continuing	-
		Subtotal	-	10.594		0.690		25.472		-		25.472	Continuing	Continuing	N
Support (\$ in Million	ıs)			FY 2	2017	FY 2	2018		2019 ase	FY 2	2019 CO	FY 2019 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 o Contrac
NC3 Stand-up	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
		Subtotal	-	-		-		-		-		-	Continuing	Continuing	N/
Management Service	es (\$ in M	lillions)		FY 2	2017	FY 2	2018		2019 ase	FY 2	2019 CO	FY 2019 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 o Contrac
MSI PSC (Eng/Acq Spt/ Travel/IMPAC)	Various	Various : Various	-	0.978	Oct 2016	0.233	Oct 2017	0.470	Oct 2018	0.000		0.470	Continuing	Continuing	-
NC3 PEO Standup	Various	Various : Various	-	-						-		-	Continuing	Continuing	-
NC3 Integration (A&AS)	Various	Various : Various	-	2.000	Feb 2018			-				-	Continuing	Continuing	-
		Subtotal	-	2.978		0.233		0.470		0.000		0.470	Continuing	Continuing	N/
								FV :	2019	FY 2	2019	FY 2019	Cost To	Total	Target Value o
			Prior Years	FY 2	2017	FY 2	2018		ise		0	Total	Complete	Cost	Contrac

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tion/Budget Activity																			Da							
				F E	PE 03	03 <sup>-</sup> gen	gram E 131F / ncy Cor l)	Mini	mun	n Es	sent	ial		<del>)</del> )				(Number/Name) I MEECN System Improvement					ent			
F	Y 201	7		FY 2	2018		F	FY 201	9		FY	2020	)		F١	/ 20	021		FY	202	22		F	Y 2	023	
	2 3				3		1	2 3	_	1	2	3		1			3	1	_			4		2	3	4
l System Improvement																										
ntegration																										
CN System Improvement																										
Annual Report - FY18								,																		
Annual Report - FY19																										
Annual Report - FY20																										
Annual Report - FY21																										
Annual Report - FY22																										
Annual Report - FY23																										
Dem/Val																										

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (N	umber/Name)
3600 / 7	PE 0303131F I Minimum Essential	672832 / N	MEECN System Improvements
	Emergency Communications Network		
	(MEECN)		

# Schedule Details

	Sta	art	En	ıd
Events by Sub Project	Quarter	Year	Quarter	Year
MEECN System Improvement				
NC3 Integration	1	2017	4	2017
MEECN System Improvement	1	2017	4	2023
NC3 Annual Report - FY18	4	2018	4	2018
NC3 Annual Report - FY19	4	2019	4	2019
NC3 Annual Report - FY20	4	2020	4	2020
NC3 Annual Report - FY21	4	2021	4	2021
NC3 Annual Report - FY22	4	2022	4	2022
NC3 Annual Report - FY23	4	2023	4	2023
NC3 Dem/Val	1	2019	4	2019

Exhibit R-2A, RDT&E Project Ju	stification	: PB 2019 A	Air Force							Date: Febr	uary 2018	
Appropriation/Budget Activity 3600 / 7					PE 030313	am Elemen 31F / Minimo y Communio	um Essentia	al ,	<b>Project (N</b> 672835 / C		ne) F/LF Receiv	er Inc 2
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
672835: Common VLF/LF Receiver Inc 2	-	4.310	22.526	9.559	0.000	9.559	29.683	82.499	50.463	8.628	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

#### **Note**

This program, BA 07 PE 0303131F, project 672835, CVR Inc. 2, is an FY17 new start (\$15.545M).

# A. Mission Description and Budget Item Justification

Common Very Low Frequency/Low Frequency (VLF/LF) Receiver (CVR) Increment 2 (CVR Inc 2) will deliver a survivable, beyond-line-of-sight path for Emergency Action Message (EAM) reception. The intent of CVR Inc 2 is to develop and produce a common VLF/LF receiver, capable of implementing an interoperable waveform, for future platform integration to include airborne and ground based nodes, improve system performance, and reduce supportability costs through commonality. The program will also lead development of the Unified MEECN Mode (UMM) waveform.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2017	FY 2018	FY 2019
Title: CVR Inc 2	4.310	22.526	9.559
Description: Pre-Milestone B Activities			
FY 2018 Plans:			
Continue pre-development and upfront system engineering activities			
Continue requirements and technology analysis and market research			
Continue inspection/modification of Waveguide Integrated Series of Programs (WISP)model			
Continue VLF/LF antenna characterization performance assessment			
Continue Validated Online Lifecycle Threat (VOLT) Assessment			
Continue VLF/LF and UMM Working Groups			
Complete Materiel Development Decision (MDD) and obtain Acquisition Decision Memorandum (ADM)			
Develop UMM Waveform Reference Architecture			
Develop acquisition strategy, requirements trades, mission analysis, and Government reference architecture in preparation for			
Milestone B			
Draft system requirements documentation and validate requirements			
Continue work on UMM VLF/LF Waveform Standard			
Develop Modeling and Simulation on UMM VLF/LF Waveform Standard			
Conduct Platform Interface Assessments			

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: F	ebruary 2018	3
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0303131F I Minimum Essential Emergency Communications Network (MEECN)	_	ct (Number/I 35 / Common	Name) VLF/LF Rece	eiver Inc 2
B. Accomplishments/Planned Programs (\$ in Millions)  Plan for and participate in AFGSC High Performance Team (HPT)  Complete Broad Agency Announcement (BAA)  Continue to develop RFP and Milestone B documentation			FY 2017	FY 2018	FY 2019
FY 2019 Plans:  Complete inspection/modification of Waveguide Integrated Series of Progression VLF/LF antenna characterization performance assessment Continue VLF/LF and UMM Working Groups Complete UMM Waveform Reference Architecture Complete UMM VLF/LF waveform standard Complete Platform Interface Assessments Complete RFP Complete Milestone B documentation Conduct Competitive Source Selection	rams (WISP)model				
FY 2018 to FY 2019 Increase/Decrease Statement: Decrease of budget from FY2018 to FY2019 due to rephasing of program					
	Accomplishments/Planned Programs Su	btotals	4.310	22.526	9.55

# C. Other Program Funding Summary (\$ in Millions)

			FY 2019	FY 2019	FY 2019					Cost To		
<u>Line Item</u>	FY 2017	FY 2018	<b>Base</b>	<u>000</u>	<u>Total</u>	FY 2020	FY 2021	FY 2022	FY 2023	<b>Complete</b>	<b>Total Cost</b>	
• APAF 03 PE 0303131F: CVR Inc 2	-	-	-	-	-	-	-	6.378	49.202	Continuing	Continuing	

## Remarks

# D. Acquisition Strategy

CVR Inc 2 will use a full and open competitive source selection to award an EMD contract for increment 2. CVR Inc 2 will use a competitive approach to fulfill the overall requirements of the program.

## **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.

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Exhibit R-3, RDT&E I Appropriation/Budge		<u>-</u>	10 19 AIF F	-orce		D 4 D-4	ogram Ela	mont /N	lumber/Na	amo)	Droise	(Number	February	2010	
3600 / 7	et Activity					PE 030	3131F I N ency Com	1inimum i		•		l Commo		Receiver	r Inc 2
Product Developme	nt (\$ in Mi	illions)		FY 2	2017	FY 2	2018		2019 ase		2019 CO	FY 2019 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 Contrac
CVR Inc 2 - Early Development	Various	Various : TBD	-	1.052	Jul 2017	17.882	Mar 2018	3.463	Jan 2019	-		3.463	Continuing	Continuing	-
DMS (MITRE)	Various	Various : TBD	-	1.212	Apr 2017	0.475	Feb 2018	0.758	Oct 2018	-		0.758	Continuing	Continuing	-
DMS (Lincoln Lab)	Various	Various : TBD	-	-		0.314	Jan 2018	0.160	Oct 2018	-		0.160	Continuing	Continuing	-
		Subtotal	-	2.264		18.671		4.381		-		4.381	Continuing	Continuing	N/
Support (\$ in Millions)				FY 2	2017	FY :	2018		2019 ase		2019 CO	FY 2019 Total			
Cost Category Item			Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
GFE	Various	Various : TBD	-	0.007	Sep 2017	-		-		-		-	Continuing	Continuing	-
		Subtotal	-	0.007		-		-		-		-	Continuing	Continuing	N/
Management Service	es (\$ in M	illions)		FY 2	2017	FY 2	2018		2019 ase		2019 CO	FY 2019 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 o Contrac
PSC (Eng/Acq Spt/Travel/IMPAC)	Various	Various : TBD	-	1.671	Jun 2017	3.227	Oct 2017	2.905	Nov 2018	-		2.905	Continuing	Continuing	-
PSC - MITRE	Various	Various : TBD	_	0.368	May 2017	0.628	Nov 2017	2.273	Oct 2018	-		2.273	Continuing	Continuing	-
		Subtotal	-	2.039		3.855		5.178		-		5.178	Continuing	Continuing	N/
			Prior Years	FY 2	2017	FY:	2018		2019 ase		2019 CO	FY 2019 Total	Cost To	Total Cost	Target Value o Contrac
															N/

PE 0303131F: *Minimum Essential Emergency Communicatio...*Air Force

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ppropriation/Budget Activity 00 / 7							PE 030	0313 <sup>,</sup> ency	1F <i>  </i>	Minim	num	Number Servitions N	itial		<del>)</del> )						Nam VLF		Re	ceive	r Inc :
	F	Y 201	7		FY	2018	3	FY	2019	•		FY 202	20		FY	202	1		FY	202	22		FY	202	3
	1	2 3	4	1	2	3	4 1	2	3	4	1	2 3	4	1	1 2	3	4	1	2	3	4	1	2	2 3	4
CVR Inc. 2		'			,		'							,		'			,						
Early Systems Engineering																									
Requirements Development																									
Materiel Development Decision (MDD)																									
RFP Release																									
Milestone B Decision																									
Contract Award																									
Engineering and Manufacturing Development (EMD)																									
(EMD)					-,										,										

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (N	umber/Name)
3600 / 7	PE 0303131F I Minimum Essential	672835 / C	Common VLF/LF Receiver Inc 2
	Emergency Communications Network		
	(MEECN)		

# Schedule Details

	St	art	Е	nd
Events by Sub Project	Quarter	Year	Quarter	Year
CVR Inc. 2				
Early Systems Engineering	1	2017	4	2019
Requirements Development	1	2017	4	2019
Materiel Development Decision (MDD)	3	2018	3	2018
RFP Release	1	2020	1	2020
Milestone B Decision	2	2021	2	2021
Contract Award	3	2021	3	2021
Engineering and Manufacturing Development (EMD)	3	2021	4	2023

Exhibit R-2A, RDT&E Project Ju	stification	: PB 2019 A	ir Force							<b>Date:</b> Febr	uary 2018	
Appropriation/Budget Activity 3600 / 7			am Elemen 31F / Minimo y Communio	um Essentia	al ,	Project (N 676029 I G Terminal		n <b>e)</b> ew Strategic	Network			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
676029: Global Aircrew Strategic Network Terminal	-	18.463	10.026	14.692	0.000	14.692	0.000	0.001	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

Global ASNT replaces inadequate, unsustainable strategic communications equipment at bomber, tanker and reconnaissance Wing Command Posts (WCPs), Nuclear Task Forces, Munitions Support Squadrons (MUNSS), and for Mobile Support Teams (MSTs). Global ASNT is a ground-based system that will provide survivable, secure communication paths to receive Emergency Action Messages (EAMs), Force Management messages, and Force Direction messages and disseminate them to bomber, tanker, and reconnaissance aircrews.

Global ASNT is being fielded in separate capability increments. Global ASNT Increment 1 (Inc 1) includes early system engineering support for the planning and development for the future Global ASNT Increments.

Global ASNT Inc 1 fields required Extremely High Frequency/Advanced Extremely High Frequency (EHF/AEHF) capabilities and replaces inadequate, unsustainable strategic mobile and fixed-site Single Channel Anti-jam Man-Portable (SCAMP) terminals and Secure, Mobile, Anti-Jam, Reliable, Tactical - Terminal (SMART-T) equipment.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2017	FY 2018	FY 2019	
Title: Global ASNT Inc 1	18.463	10.026	14.692	
Description: Engineering & Manufacturing Development (EMD)				
FY 2018 Plans: Complete Government Developmental Testing (DT) and start conduct of Operational Testing (OT) in preparation for Milestone C. Resolve any Deficiency Reports (DRs) identified in integration and test of system level hardware and software. Resolve any Deficiency Reports (DRs) identified in DT Develop MS C documentation and Engineering Change Orders (ECOs) Conduct satellite network simulations and associated MITRE lab analytic activities through DMS/PSC				
FY 2019 Plans: Complete Operational Testing (OT) in preparation for Milestone C Resolve any Deficiency Reports (DRs) identified in DT/OT testing. Resolve any outstanding Deficiency Reports (DRs) identified in integration and test of system level hardware and software.				

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PE 0303131F: *Minimum Essential Emergency Communicatio...*Air Force

<b>Exhibit R-2A</b> , <b>RDT&amp;E Project Justification</b> : PB 2019 Air Force		Date: I	ebruary 2018	3
Appropriation/Budget Activity 3600 / 7	PE 0303131F I Minimum Essential	<b>Project (Number</b> / 676029 / Global A Terminal	,	gic Network
B. Accomplishments/Planned Programs (\$ in Millions)  Complete satellite network simulations and associate MITRE lab Complete Milestone C documentation and Engineering Change C	•	FY 2017	FY 2018	FY 2019
FY 2018 to FY 2019 Increase/Decrease Statement: Increase due to cost increases of delayed operational testing acti Milestone C documentation.	vities and engineering change order processing in preparation	on for		

# C. Other Program Funding Summary (\$ in Millions)

_		-	FY 2019	FY 2019	FY 2019					<b>Cost To</b>	
<u>Line Item</u>	FY 2017	<b>FY 2018</b>	Base	OCO	<b>Total</b>	FY 2020	FY 2021	FY 2022	FY 2023	Complete	<b>Total Cost</b>
<ul> <li>OPAF 03 PE 0303131F:</li> </ul>	198.925	0.292	140.875	-	140.875	159.360	48.127	67.424	51.006	Continuing	Continuing
Global ASNT Inc. 1 (834210)											
• OPAF 05 PE 0303131F:	0.000	0.000	73.470	-	73.470	68.795	0.000	0.000	0.000	Continuing	Continuing
Global ASNT Inc. 1 (861900											

**Accomplishments/Planned Programs Subtotals** 

10.026

14.692

18.463

### Remarks

# D. Acquisition Strategy

Global ASNT used a full and open competitive approach to award an EMD contract for Increment 1. Global ASNT will continue to use a competitive incremental approach to fulfill the overall requirements for Increments 2 and 3.

#### **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.

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Product Developme	oduct Development (\$ in Millions)				2017	FY 2	2018	FY 2 Ba	2019 Ise	FY 2	2019 CO	FY 2019 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
Global ASNT Inc 1 - Engineering & Manufacturing Development	C/FPIF	Raytheon : Marlborough, MA	-	9.896	Nov 2017	4.567	Feb 2018	11.630	Oct 2018	-		11.630	Continuing	Continuing	-
Global ASNT Inc 1 - Satellite Simulations	SS/FFP	MIT/Lincoln Laboratory : Lexington, MA	-	1.855	Mar 2018	-		1.143	Mar 2019	-		1.143	Continuing	Continuing	-
		Subtotal	-	11.751		4.567		12.773		-		12.773	Continuing	Continuing	N/A

#### Remarks

- Raytheon Global ASNT Inc 1 EMD contract is an incrementally funded continuing effort on the existing contract.

Support (\$ in Millions					2017	FY 2	2018	FY 2 Ba	2019 ise		2019 CO	FY 2019 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
Global ASNT Inc 1 - MITRE Lab	SS/CPFF	MITRE : Bedford, MA	-	0.358	Oct 2017	0.380	Oct 2018	-		-		-	Continuing	Continuing	-
Global ASNT Inc 1 - Software Support	Various	Various : NV	-	0.611	Feb 2018	-		0.371	Feb 2019	-		0.371	Continuing	Continuing	-
Global ASNT Inc 1 - GFE	Various	Various : NV	-	0.003	Feb 2017	-		-		-		-	Continuing	Continuing	-
		Subtotal	-	0.972		0.380		0.371		-		0.371	Continuing	Continuing	N/A

Test and Evaluation	est and Evaluation (\$ in Millions)			FY 2	2017	FY 2	2018		2019 ise	FY 2	2019 CO	FY 2019 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
Global ASNT Inc 1 - Government Test and Evaluation	Various	Various : NV	-	0.926	Nov 2017	0.830	Apr 2018	0.540	Oct 2018	-		0.540	Continuing	Continuing	-
Global ASNT Inc 1 - NSA	MIPR	NSA, Maryland : NV	-	0.017	Feb 2017	0.011	Feb 2018	0.007	Nov 2018	-		0.007	Continuing	Continuing	-

PE 0303131F: *Minimum Essential Emergency Communicatio...*Air Force

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Exhibit R-3, RDT&E I	Project C	ost Analysis: PB 2	019 Air F	orce								Date:	February	2018	
<b>Appropriation/Budge</b> 3600 / 7	et Activity	1				PE 030	3131F I M ency Comi	linimum l	umber/Na Essential ons Netwo	,		(Number I Global / al		trategic N	etwork
Test and Evaluation	(\$ in Milli	ons)		FY 2	2017	FY 2	2018		2019 ise		2019 CO	FY 2019 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
		Subtotal	-	0.943		0.841		0.547		-		0.547	Continuing	Continuing	N/A
Management Service	es (\$ in M	illions)		FY 2	2017	FY 2	2018		2019 ise		2019 CO	FY 2019 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
Global ASNT Inc 1 - PSC (Eng/Acq Support, Travel)	Various	Various : NV	-	2.022	Jul 2017	2.166	Feb 2018	1.001	Oct 2018	-		1.001	Continuing	Continuing	-
Global ASNT Inc 1 - PSC (MITRE)	SS/CPFF	MITRE : Bedford, MA	-	2.775	Oct 2017	2.072	Oct 2018	-		-		-	Continuing	Continuing	-
		Subtotal	-	4.797		4.238		1.001		-		1.001	Continuing	Continuing	N/A
			Prior Years	FY 2	2017	FY 2	2018		2019 ise		2019 CO	FY 2019 Total	Cost To	Total Cost	Target Value of Contract
		Project Cost Totals	-	18.463		10.026		14.692		-		14.692	Continuing	Continuing	N/A

Remarks

nibit R-4, RDT&E Schedule Profile: PB 2019	Air Fo	rce																	1				e: Fe			201	8	
propriation/Budget Activity 00 / 7								PE Em	030	3131 ency	F//	leme Minir nmur	nun	n Ess	sent	ial	•			029	İ Gl		er/Na I Aird			ateg	gic Ne	twor
		FY 2	017		ļ	FY	2018	8		FY	2019	)		FY 2	2020	)		FY:	2021		l	FY 2	2022			FY	2023	
	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
Global ASNT Inc. 1																												
Global ASNT Inc 1 - Engineering and Manufacturing Development																												
Global ASNT Inc 1 - Test																												
Global ASNT Inc 1 - Milestone C Decision																												
Global ASNT Inc 1 - Production and Deployment																												
Global ASNT Inc 1 - IOC																												
Global ASNT Inc 1 - Interim Contractor Support																												
Global ASNT Inc 1 - FOC																												

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity	3	- , (	umber/Name)
3600 / 7	PE 0303131F I Minimum Essential Emergency Communications Network	Terminal	Global Aircrew Strategic Network
	(MEECN)		

# Schedule Details

	St	art	E	nd
Events by Sub Project	Quarter	Year	Quarter	Year
Global ASNT Inc. 1				
Global ASNT Inc 1 - Engineering and Manufacturing Development	1	2017	2	2019
Global ASNT Inc 1 - Test	4	2017	1	2019
Global ASNT Inc 1 - Milestone C Decision	2	2019	2	2019
Global ASNT Inc 1 - Production and Deployment	2	2019	4	2023
Global ASNT Inc 1 - IOC	4	2020	4	2020
Global ASNT Inc 1 - Interim Contractor Support	2	2020	4	2023
Global ASNT Inc 1 - FOC	4	2023	4	2023

Exhibit R-2A, RDT&E Project Ju	ıstification	: PB 2019 A	ir Force							<b>Date:</b> Febr	uary 2018	
Appropriation/Budget Activity 3600 / 7					R-1 Progra PE 030313 Emergency (MEECN)	31F I Minimu	•	al .	, ,	umber/Nan Global ASN7	,	
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
676030: Global ASNT Inc 2	-	3.754	15.366	48.895	0.000	48.895	35.208	8.348	0.016	0.010	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

# A. Mission Description and Budget Item Justification

Global ASNT replaces inadequate, unsustainable strategic communications equipment at bomber, tanker and reconnaissance Wing Command Posts (WCPs), Nuclear Task Forces, Munitions Support Squadrons (MUNSS), and for Mobile Support Teams (MSTs). Global ASNT is a ground-based system that will provide survivable, secure communication paths to receive Emergency Action Messages (EAMs), Force Management messages, and Force Direction messages and disseminate them to bomber, tanker, and reconnaissance aircrews.

Global ASNT is being fielded in separate capability increments.

R Accomplishments/Planned Programs (\$ in Millions)

Global ASNT Increment 2 delivers a replacement Aircrew Alerting System (AAS) consisting of personal and general alerting equipment, and High Frequency (HF) and Ultra High Frequency (UHF) capabilities. Increment 2 replaces inadequate, unsustainable Electromagnetic Pulse Hardened Dispersal Communication (EHDC) systems and Aircrew Alerting Communications Electromagnetic Pulse (AACE) systems.

B. Accomplishments/Planned Programs (\$ in willions)	FY 2017	FY 2018	FY 2019
Title: Global ASNT Inc 2	3.754	15.366	48.895
Description: Pre-Milestone B Activites			
FY 2018 Plans: Conduct MDD/ASP Review CDD and Modify it for HF Survivability Finalize documentation for Request for Proposal (RFP) Continue preparation for Milestone B and Contract Award			
FY 2019 Plans: Release Request for Proposal (RFP) Review proposal submissions and engage in Source Selection/Technical Evaluation Activities Complete preparation for Milestone B and Contract Award FY 2018 to FY 2019 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0303131F / Minimum Essential	- 3 (	umber/Name) Global ASNT Inc 2
	Emergency Communications Network (MEECN)		
	(==)		

B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019
Increase due to ramp towards Milestone B and Contract award				
Acco	omplishments/Planned Programs Subtotals	3.754	15.366	48.895

# C. Other Program Funding Summary (\$ in Millions)

N/A

#### Remarks

# D. Acquisition Strategy

Global ASNT used a full and open competitive approach to award an EMD contract for Increment 1. Global ASNT will continue to use a competitive incremental approach to fulfill the overall requirements for Increments 2 and 3.

## 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.

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					UN	ICLASS	SIFIED								
Exhibit R-3, RDT&E	Project C	ost Analysis: PB 2	2019 Air F	orce								Date:	February	/ 2018	
<b>Appropriation/Budge</b> 3600 / 7	et Activity	<b>y</b>				PE 030	ogram Ele 3131F / M ency Com N)	linimum l	Essential	•		t (Numbe		2	
Product Developmen	nt (\$ in M	illions)		FY	2017	FY :	2018		2019 ase		2019 CO	FY 2019 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 o Contrac
Global ASNT Inc 2 - Pre Milestone B Activities	TBD	Not specified. : TBD	-	3.146	Nov 2017	13.492	Mar 2018	4.192	Oct 2018	-		4.192	Continuing	Continuing	-
Prime Contract	TBD	Not specified. : TBD	-	-		-		42.567	Aug 2019	-		42.567	Continuing	Continuing	-
		Subtotal	-	3.146		13.492		46.759		-		46.759	Continuing	Continuing	N/.
Support (\$ in Million	s)			FY	2017	FY :	2018		2019 ase		2019 CO	FY 2019 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 Contrac
Global ASNT Inc 2 - MITRE Lab	Various	MITRE : Bedford, MA	-	-		-		-		-		-	Continuing	Continuing	-
Global ASNT Inc 2 - Information Assurance	TBD	Not specified. : TBD	-	0.089	Jul 2017	0.256	Jul 2018	0.131	Jul 2019	-		0.131	Continuing	Continuing	-
		Subtotal	-	0.089		0.256		0.131		-		0.131	Continuing	Continuing	N/
Test and Evaluation	(\$ in Milli	ions)		FY	2017	FY 2	2018		2019 ase		2019 CO	FY 2019 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 Contrac
Global ASNT Inc 2 - Test Planning	Various	Various : NV	-	0.075	Jul 2017	1.118	Jul 2018	1.018	Jul 2019	-		1.018	Continuing	Continuing	-
		Subtotal	-	0.075		1.118		1.018		-		1.018	Continuing	Continuing	N/
Management Service	es (\$ in M	lillions)		FY:	2017	FY :	2018		2019 ase		2019 CO	FY 2019 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 Contrac
Global ASNT Inc 2 - PSC (Eng/Acq Support, Travel)	Various	Various : NV	_	0.444	Jun 2017	0.500	Feb 2018	0 987	Oct 2019	_		0.987	Continuino	Continuing	_

PE 0303131F: *Minimum Essential Emergency Communicatio...*Air Force

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Exhibit R-3, RDT&E Project Cost Analys	<b>s:</b> PB 2019 Air F	orce				Date:	February	2018	
Appropriation/Budget Activity 3600 / 7			PE 0303131F / Mi	ment (Number/Nar nimum Essential nunications Network	676030	t (Numbe ) / Global /	,	2	
Management Services (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total			
Contract Method Perform	ng Prior	Award	Award	Award	Award		Cost To	Total	Target Value of

									Target
	Prior			FY 2019	FY 201	9 FY 2019	Cost To	Total	Value of
	Years	FY 2017	FY 2018	8 Base	oco	Total	Complete	Cost	Contract
Project Cost Totals	-	3.754	15.366	48.895	-	48.895	Continuing	Continuing	N/A

0.500

Cost

Date

Cost

0.987

Date

Cost

Date

Cost

0.444

Years

Date

Remarks

**Cost Category Item** 

& Type

**Activity & Location** 

Subtotal

Cost

Complete

0.987 Continuing Continuing

Cost

Contract

N/A

						NCL																		
hibit R-4, RDT&E Schedule Profile: PB 2019 A	ir For	се																D	ate:	Febr	uary	2018		
opropriation/Budget Activity 00 / 7	R-1 Program Element (Number/Name) PE 0303131F / Minimum Essential Emergency Communications Network (MEECN) Project (Number/Name) 676030 / Global ASNT Inc.																							
	F	Y 201	17		FY 20	118		FY 20	19		FY 2	2020		F'	Y 21	021		F	Y 20	122		FY 2	123	_
	L .		4			3 4			4		2		4			3 .	4 1			3 4	1		3	4
Global ASNT Inc. 2																								_
Global ASNT Inc 2 Pre-Milestone B Activities																								
Global ASNT Inc 2 - Release Request for Proposal																							_	
Global ASNT Inc 2 - Milestone B Decision													-											
Global ASNT Inc 2 - Contract Award																								
Global ASNT Inc 2 - Engineering and Manufacturing Development																								
Global ASNT Inc 2 - Preliminary Design Review (PDR)																								
Global ASNT Inc 2 - Critical Design Review (CDR)																								
Global ASNT Inc 2 - Test																								
Global ASNT Inc 2 - Milestone C Decision																								
Global ASNT Inc 2 - Production & Deployment																								

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
3600 / 7	` ` ` `	• `	umber/Name) Global ASNT Inc 2

# Schedule Details

Events by Sub Project	St	Start		End	
	Quarter	Year	Quarter	Year	
Global ASNT Inc. 2					
Global ASNT Inc 2 Pre-Milestone B Activities	1	2017	4	2018	
Global ASNT Inc 2 - Release Request for Proposal	1	2019	1	2019	
Global ASNT Inc 2 - Milestone B Decision	3	2019	3	2019	
Global ASNT Inc 2 - Contract Award	4	2019	4	2019	
Global ASNT Inc 2 - Engineering and Manufacturing Development	4	2019	4	2021	
Global ASNT Inc 2 - Preliminary Design Review (PDR)	2	2020	2	2020	
Global ASNT Inc 2 - Critical Design Review (CDR)	3	2020	3	2020	
Global ASNT Inc 2 - Test	4	2021	3	2023	
Global ASNT Inc 2 - Milestone C Decision	4	2023	4	2023	
Global ASNT Inc 2 - Production & Deployment	4	2023	4	2023	