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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2022 Air Force **Date:** May 2021

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207610F / <i>Battlefield Abn Comm Node (BACN)</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	25.960	6.815	32.008	0.000	32.008	-	-	-	-	-	-
671201: <i>E-11 Development</i>	-	25.960	6.815	32.008	0.000	32.008	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

Battlefield Airborne Communications Node (BACN) enables tactical edge Joint and Coalition information interoperability via air, space, and surface systems, to include a Backbone Network for high capacity data transfer. As requirements emerge, BACN will integrate new hardware and software capabilities that improve system performance, interoperability, availability and open mission system technologies. Efforts include, but are not limited to, expansion of external time reference capabilities, Survivability Urgent Operational Need (UON) Military Global Positioning System (GPS) and other system enhancements, development and integration of advanced antennas and waveforms, ground support capabilities and assimilation of mandates levied on the BACN systems. Survivability UON is required for BACN Fleet to fly in increasingly contested Area of Responsibility (AOR). Safety of flight considerations, including performance, aircraft structural integrity, availability, and continuity of service requirements will be addressed. Efforts will include required non-recurring engineering and Diminishing Manufacturing Sources (DMS) issues, the development of simulators/trainers, development of training materials, and technical publications.

Execute risk reduction activities for development of future capabilities on BACN payload/aircraft efforts.

Beginning in FY21, to support the divestiture of the EQ-4B (a variant of the RQ-4 Block 20/30 aircraft) efforts will taper accordingly, to include BACN payload sustainment & other BACN specific efforts.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY20 \$0.713M was expended for civilian pay expenses in this program element, and in FY21 \$0.843M is forecasted for civilian pay expenses in this program element.

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 year.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022 Base</b>	<b>FY 2022 OCO</b>	<b>FY 2022 Total</b>	
Previous President's Budget	26.946	6.827	34.199	0.000	34.199	
Current President's Budget	25.960	6.815	32.008	0.000	32.008	
Total Adjustments	-0.986	-0.012	-2.191	0.000	-2.191	
• 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	-0.986	-0.012	-2.191	0.000	-2.191	
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>				<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<b>Title:</b> Main Base Operating Base Integration Communications Engineering				-	1.500	1.500
<b>Description:</b> Small scale enhancements to BACN ground sites to enable increased operational effectiveness and/or efficiencies						
<b>FY 2021 Plans:</b> Efforts are to support Direct Cite Civilian Pay (DCA)						
<b>FY 2022 Plans:</b> FY22 funds will support initial evaluation of sites current configuration and development of initial solutions of solutions that require minimal levels of effort to implement. Efforts are to support Direct Cite Civilian Pay (DCA)						
<b>Title:</b> Military GPS Phase II				25.960	5.315	28.110
<b>Description:</b> Effort continues Phase II of the Military GPS effort, including required testing, certification and administrative actions of all installed components to receive Full FAA certification and allow for close out of survivability UON.						
<b>FY 2021 Plans:</b> N/A						
<b>FY 2022 Plans:</b> FY22 funds support testing, certification, and miscellaneous actions to support attaining full FAA certification of E-11A MilGPS system onto the existing BACN capability.						

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
Full FAA certification delayed from FY21 to FY22, due to lack of active year funding availability. Original proposal from sole-source 52M as of May 21 contract vehicle Period of Performance (PoP) no longer supports effort; FY22 seeking open competition to drive down costs.  FY17 - FY21: BPAC was 675383. <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Funding increase will support Survivability Urgent Operational Need(UON) Military Global Positioning System (Mil GPS) in testing, certification, and miscellaneous actions to support attaining full FAA certification of E-11A MilGPS system onto the existing BACN capability. .  Original BPAC was 675383.				
<b>Title:</b> Data Links / Gateway Modernization Engineering <b>Description:</b> Development required for integration of updated enterprise terminal solutions onto the BACN Capability. <b>FY 2021 Plans:</b> N/A <b>FY 2022 Plans:</b> FY22 funds will support MIDS JTRS Modernization, ARC 210 Gen 6, and integration of Open Mission Systems (OMS) concepts into BACN. <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b> Funding support of OMS efforts for BACN system.		-	0.000	2.398
<b>Accomplishments/Planned Programs Subtotals</b>		25.960	6.815	32.008
<b>D. Other Program Funding Summary (\$ in Millions)</b> N/A				
<b>Remarks</b>				
<b>E. Acquisition Strategy</b> Provides common development, integration and interoperability of the BACN payload, platforms and supporting systems and equipment. Acquisition strategies vary by effort, will utilize all contracting options available but the majority of development and integration is normally accomplished by the weapon system prime contractor.				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force												Date: May 2021				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0207610F / Battlefield Abn Comm Node (BACN)				671201 / E-11 Development								
<b>Product Development (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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	
MilGPS - 675383	SS/CPAF	NGDS : Wichita, KS	-	20.121	Jun 2020	4.413	Jan 2021	-		-		-	-	-	-	
MilGPS - 671201	C/CPAF	TBD : TBD	-	-		-		26.292	Jan 2022	-		26.292	-	-	-	
<b>Subtotal</b>			-	20.121		4.413		26.292		-		26.292	-	-	N/A	
<b>Support (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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	
Acquisition Support	Various	Various : Various, MA	-	1.732	Dec 2019	1.500	Jan 2021	1.500	Jan 2022	-		1.500	-	-	-	
<b>Subtotal</b>			-	1.732		1.500		1.500		-		1.500	-	-	N/A	
<b>Test and Evaluation (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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	
Test and Evaluation	C/CPAF	Not specified. : TBD	-	1.068	Jan 2020	-		0.500	Dec 2021	-		0.500	-	-	-	
<b>Subtotal</b>			-	1.068		-		0.500		-		0.500	-	-	N/A	
<b>Management Services (\$ in Millions)</b>				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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	
BACN A&AS	Various	A&AS : Bedford, MA	-	1.068	Apr 2020	-		1.222	Apr 2022	-		1.222	-	-	-	
MITRE	Various	MITRE : Bedford, MA	-	1.971	Oct 2019	0.814	Oct 2020	2.400	Oct 2021	-		2.400	-	-	-	
Travel	Various	Not specified. : TBD	-	-		0.088	Oct 2020	0.094	Oct 2021	-		0.094	-	-	-	
<b>Subtotal</b>			-	3.039		0.902		3.716		-		3.716	-	-	N/A	

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	<b>Prior Years</b>	<b>FY 2020</b>		<b>FY 2021</b>		<b>FY 2022 Base</b>		<b>FY 2022 OCO</b>		<b>FY 2022 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	-	25.960		6.815		32.008		-		32.008	-	-	N/A

**Remarks**



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Air Force		<b>Date:</b> May 2021
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207610F / <i>Battlefield Abn Comm Node (BACN)</i>	<b>Project (Number/Name)</b> 671201 / <i>E-11 Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Battlefield Airborne Communication Node (BACN)</i></b>				
BACN MilGPS Development Testing and Certification	2	2022	4	2022