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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Air Force **Date:** April 2022

<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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	5.450	32.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
671201: <i>E-11 Development</i>	-	5.450	32.008	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**

Battlefield Airborne Communication 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, prototyping of activities in line with department approach of system development upgrades to support current/future open mission system (OMS) technologies. Efforts may include onboard enhancements such as datalink receiving capability in platform cockpit to include but not limited to Link-16, as well as analysis and developmental efforts to explore feasibility of onboard operators to support onboard payload control capabilities. Efforts include, but are not limited to, expansion of external time reference capabilities, development/integration of additional communications systems/subsystems and components (Ka band SATCOM, IBS, PTS, etc.), enhancements to Military Global Positioning System (GPS), integration of advanced antennas and waveforms, development efforts enabling integration of ABMS/JADC2 capabilities, enhancements to ground support capabilities. Additionally, safety of flight considerations, to include weapon system performance, aircraft structural integrity, availability, continuity of service requirements will be addressed, aircraft avionics upgrades, as well as early system engineering assessments and risk reduction activities associated with weapon system (payload & platform) survivability in non-contested through contested environments. Efforts include required non-recurring engineering and Diminishing Manufacturing Sources (DMS) issues, the development of simulators/trainers, development of training materials, the development of future waveforms that are backwards compatible with existing communications, and technical publications as well as the assimilation of any mandates levied on the BACN weapon system. Execute risk reduction activities for development of future capabilities on BACN payload/aircraft 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.

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 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	
Previous President's Budget	6.815	32.008	0.000	0.000	0.000	
Current President's Budget	5.450	32.008	0.000	0.000	0.000	
Total Adjustments	-1.365	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	-1.365	0.000				
• SBIR/STTR Transfer	0.000	0.000				
• Other Adjustments	0.000	0.000	0.000	0.000	0.000	
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>						
<b>Title:</b> Main Base Operating Base Integration Communications Engineering				<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b>Description:</b> Small scale enhancements to BACN ground sites to enable increased operational effectiveness and/or efficiencies				0.890	1.500	0.000
<b>FY 2022 Plans:</b> FY22 funds will support initial evaluation of sites current configuration and development of initial solutions that require minimal levels of effort to implement. Efforts are to support Direct Cite Civilian Pay (DCA)						
<b>FY 2023 Plans:</b> N/A						
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> No funds appropriated for FY23.						
<b>Title:</b> Military GPS Enhancements				4.560	28.110	0.000
<b>Description:</b> Effort enhances Military GPS, including integration of emerging technologies, testing, & certification.						
<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>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2023 Air Force		<b>Date:</b> April 2022		
<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>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</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 sought open competition to drive down costs.  FY17 - FY21: BPAC was 675383. <b>FY 2023 Plans:</b> N/A <b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> No funds appropriated for FY23.				
<b>Title:</b> High Capacity Backbone (HCB) <b>Description:</b> Initial design for integration of HCB equipment to enable BACN to function as the backbone for high capacity data transfer.  <b>FY 2022 Plans:</b> No prior HCB activities. <b>FY 2023 Plans:</b> N/A <b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> No funds appropriated for FY23.		0.000	0.000	0.000
<b>Title:</b> Data Links / Gateway Modernization Engineering <b>Description:</b> Development enhancements required for integration of updated enterprise terminals to the BACN Capability.  <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 2023 Plans:</b> N/A <b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> No funds appropriated for FY23.		0.000	2.398	0.000
<b>Accomplishments/Planned Programs Subtotals</b>		5.450	32.008	0.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force Date: April 2022

**Appropriation/Budget Activity**  
3600: *Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development*

**R-1 Program Element (Number/Name)**  
PE 0207610F / *Battlefield Abn Comm Node (BACN)*

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

N/A

**Remarks**

**E. Acquisition Strategy**

Acquisition strategies varied by effort that provide research, development, integration and interoperability of the BACN platform, payload, supporting systems and equipment and will utilize all contracting options and mechanisms available.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force												Date: April 2022				
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 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	-	4.560	Jan 2021	-		-		-		-	Continuing	Continuing	-	
MilGPS - 671201	C/CPAF	TBD : TBD	-	-		26.292	Jan 2022	-		-		-	Continuing	Continuing	-	
<b>Subtotal</b>			-	4.560		26.292		-		-		-	Continuing	Continuing	N/A	
<b>Support (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	-	-		1.500	Jan 2022	-		-		-	Continuing	Continuing	-	
<b>Subtotal</b>			-	-		1.500		-		-		-	Continuing	Continuing	N/A	
<b>Test and Evaluation (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	-	-		0.500	Dec 2021	-		-		-	Continuing	Continuing	-	
<b>Subtotal</b>			-	-		0.500		-		-		-	Continuing	Continuing	N/A	
<b>Management Services (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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	-	-		1.222	Apr 2022	-		-		-	Continuing	Continuing	-	
MITRE	Various	MITRE : Bedford, MA	-	0.814	Oct 2020	2.400	Oct 2021	-		-		-	Continuing	Continuing	-	
Travel	Various	Not specified. : TBD	-	0.076	Oct 2020	0.094	Oct 2021	-		-		-	Continuing	Continuing	-	
<b>Subtotal</b>			-	0.890		3.716		-		-		-	Continuing	Continuing	N/A	



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<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>

FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
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

***Battlefield Airborne Communication Node (BACN)***

BACN MilGPS Development Testing and Certification


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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<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