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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	64.888	64.127	0.000	64.127	26.580	29.184	26.957	28.340	Continuing	Continuing
671201: <i>E-11 Development</i>	-	0.000	34.587	37.319	0.000	37.319	0.224	0.000	0.000	0.000	Continuing	Continuing
675383: <i>BATTLEFIELD AIRBORNE COMM NODE (BACN)</i>	-	0.000	30.301	26.808	0.000	26.808	26.356	29.184	26.957	28.340	Continuing	Continuing

**Note**

This program, BA 7, PE 0207238F, project 675383, BACN Resiliency Solutions, is a new start.  
 This program, BA 7, PE 0207238F, project 675383, BACN Payload Operations and Maintenance Trainer, is a new start.

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

Budget Program Activity Code (BPAC) 671201 is primarily focused on Operational Systems Development for the E-11 BACN platform, and Budget Program Activity Code (BPAC) 675383 is primarily focused on BACN payload weapon system components.

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 Satellite Communications (Ka-SATCOM), Integrated Broadcast System (IBS), Protected Tactical Satellite Communications (PTS), enhancements to Military Global Positioning System (MilGPS), integration of advanced antennas and waveforms, development efforts enabling integration of Advanced Battle Management System (ABMS)/ Joint All Domain Command and Control (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, if needed, long lead items required for successful integration of subsystems (Ka-Band SATCOM, IBS, PTS, Mil-GPS), 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 includes future development and/or modification initiatives for payload form factor updates, integration efforts with other aerial gateway systems such as Roll on Beyond Line of Sight Enhancement (ROBE), as well as analysis and redesign efforts for improved data/voice range extension and translation.

\*This program element 0207238F is a continuation of legacy program element 0207610F. The program element transition was effective in FY 2024.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<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 0207238F / E-11A
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This program element may include necessary civilian pay expenses required to manage, execute, and deliver BACN for emergent or unanticipated weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605829F. In FY2023, \$1.110M was expended for civilian pay expenses in program element 0604281F, and in FY2024, \$1.326M is forecasted for civilian pay expenses in program element 0207238F.

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.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	64.888	159.851	0.000	159.851
Current President's Budget	0.000	64.888	64.127	0.000	64.127
Total Adjustments	0.000	0.000	-95.724	0.000	-95.724
• 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	0.000	0.000	-95.724	0.000	-95.724

**Change Summary Explanation**

Program Element consolidation resulted in funding excess. Realigned to higher DAF priorities.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A				<b>Project (Number/Name)</b> 671201 / E-11 Development			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
671201: E-11 Development	-	0.000	34.587	37.319	0.000	37.319	0.224	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Budget Program Activity Code (BPAC) 671201 is primarily focused Operational Systems Development for the E-11 BACN platform.

Battlefield Airborne Communication Node (BACN) enables tactical edge Joint and Coalition information interoperability via air, space, and surface systems, to include a 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 such as Military Global Positioning System (MilGPS), M-code or future software and 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, as well as aircraft avionics upgrades, early system engineering assessments and risk reduction activities associated with weapon system "payload" and "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 program's funds would be in addition to the civilian pay expenses budgeted in program element 0604281F. In FY2023, 1.110M was expended for civilian pay expenses in program element 0207238F, and in FY2024, 1.325M is forecasted for civilian pay expenses in this program element 0207238F.

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.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> M-Code Military Global Positioning System (MilGPS)	0.000	32.338	34.962	0.000	34.962

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 671201 / E-11 Development

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<p><b>Description:</b> Effort enhances MilGPS, including development and integration of emerging GPS and/or PNT technologies such as M-Code, testing, &amp; complete certification. Funds engineering and integration of M-Code GPS capabilities within the E-11 aircraft avionics suite. All E-11s existing and procured are required to have M-Code GPS and this effort will provide enhanced military grade GPS capabilities to the full BACN fleet. Substantial analysis, design, systems engineering, and developmental activities are required to integrate capabilities onboard existing E-11s as the aircraft are civilian derivative aircraft.</p> <p><b>FY 2024 Plans:</b> -Complete the required design artifacts to enable approval for airworthiness prior to flight testing. This requires Federal Aviation Administration (FAA) certification of the Supplemental Type Certificate (STC) for airworthiness due to aircraft being civilian derivative.</p> <p><b>FY 2025 Base Plans:</b> -Start test and integration of MILGPS M-Code technology into the BACN E-11A platform and integration with payload Common Data Link (CDL). Due to the aircraft being civilian derivative, integration efforts will require extensive testing to assure/maintain airworthiness.</p> <p><b>FY 2025 OCO Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Increase due to MilGPS testing and certification efforts, in order to demonstrate safe operation of system prior to FAA certification and TAA airworthiness approval in FY 2025.</p>					
<p><b>Title:</b> Program Support Costs (PSC)</p> <p><b>Description:</b> Various support costs to include: Direct Cite Authorization FFRDC A&amp;AS</p> <p><b>FY 2024 Plans:</b> -Provide essential program support for management and oversight required to gather, evaluate, execute, and manage program requirements. Activity is essential for continued research, development, test, and evaluation of the E-11A.</p> <p><b>FY 2025 Base Plans:</b></p>	0.000	2.249	2.357	0.000	2.357

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 671201 / E-11 Development
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
-Will provide essential program support for management and oversight required to gather, evaluate, execute, and manage program requirements. Activity is essential for continued research, development, test, and evaluation of the E-11A.  <b>FY 2025 OCO Plans:</b> N/A  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 increase due to inflation.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	34.587	37.319	0.000	37.319

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

N/A

**Remarks**

**D. 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 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 671201 / E-11 Development
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
M-Code MilGPS	SS/ Various	Northrop Grumman : San Diego, CA	-	-		32.338	Jun 2024	34.962	Dec 2024	-		34.962	Continuing	Continuing	-
<b>Subtotal</b>			-	-		32.338		34.962		-		34.962	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Direct Cite Authorization	TBD	Civilian Pay : TBD	-	-		0.663	Dec 2023	0.783	Dec 2024	-		0.783	Continuing	Continuing	-
Travel	TBD	Not specified. : TBD	-	-		0.044	Jan 2024	0.041	Jan 2025	-		0.041	Continuing	Continuing	-
Assessments	C/TBD	Not specified. : TBD	-	-		0.453	Jan 2024	0.456	Jan 2025	-		0.456	Continuing	Continuing	-
FFRDC	SS/CPAF	MITRE Corp. : Bedford, MA	-	-		0.884	Oct 2023	0.866	Oct 2024	-		0.866	Continuing	Continuing	-
A&AS	C/CPAF	ARS, Inc. : Beavercreek, OH	-	-		0.205	Mar 2024	0.211	Mar 2025	-		0.211	Continuing	Continuing	-
<b>Subtotal</b>			-	-		2.249		2.357		-		2.357	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract		
<b>Project Cost Totals</b>		-	-	34.587	37.319	-	-	37.319	Continuing	Continuing	N/A

**Remarks**  
 The requirement in FY24 to buy down the design risk on an E-11A flight simulator was deemed too costly after engagement with industry partners. We are moving forward with the simulator procurement in FY25 with BACN/HAG 3010. This balance will be used to support the M-Code development effort.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 671201 / E-11 Development
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
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

<b>E-11 Development</b>	
M-Code MilGPS	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 671201 / E-11 Development

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>E-11 Development</b>				
M-Code MilGPS	3	2024	4	2025

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A				<b>Project (Number/Name)</b> 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675383: BATTLEFIELD AIRBORNE COMM NODE (BACN)	-	0.000	30.301	26.808	0.000	26.808	26.356	29.184	26.957	28.340	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This program, BA 7, PE 0207238F, project 675383, BACN Resiliency Solutions, is a new start.

This program, BA 7, PE 0207238F, project 675383, BACN Payload Operations and Maintenance Trainer, is a new start.

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

Budget Program Activity Code (BPAC) 675383 is primarily focused on BACN payload weapon system components.

Battlefield Airborne Communication Node (BACN) enables tactical edge Joint and Coalition information interoperability via air, space, and surface systems, to include a 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 such as Ka-Band Satellite Communications (Ka-SATCOM), Integrated Broadcast System (IBS), Protected Tactical Waveform (PTW). 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 program's funds would be in addition to the civilian pay expenses budgeted in program element 0604281F. In FY2023, \$1.110M was expended for civilian pay expenses in program element 0604281F, and in FY2024, \$1.325M is forecasted for civilian pay expenses in this program element 0207238F.

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>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<p><b>Title:</b> Beyond Line of Sight (BLOS) Communications Waveform Enhancement</p> <p><b>Description:</b> This development effort focuses on integrating a SATCOM (Ka-SATCOM) system into the BACN aircraft/payload for use in contested and semi-contested environments for tactical users as well as permit BLOS payload operations. This effort supports interoperability among U.S., NATO &amp; Coalition/International partners. It ensures the ability to connect tactical users operating in contested and semi contested environments with a communications medium to enable the exchange of tactical information (e.g., threat warnings, time sensitive tracks, mission updates) by incorporating future protected waveforms and robust Anti-Jamming (AJ) enhancements.</p> <p><b>FY 2024 Plans:</b> -Complete Ka SATCOM development. Previous work was completed with FY 2022 3600 funding under PE 0207610F. Funding/effort provides for the cabling, software, hardware design work, and systems engineering necessary for Ka-SATCOM solution and required testing and airworthiness certification necessary for the military configuration.</p> <p>-Develop anti-jam system to provide additional resiliency to Ka-SATCOM capability for future integration.</p> <p><b>FY 2025 Base Plans:</b> No requirement in FY 2025.</p> <p><b>FY 2025 OCO Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Decrease due to no requirement in FY 2025.</p>	0.000	1.262	0.000	0.000	0.000
<p><b>Title:</b> BACN Resiliency Solutions</p> <p><b>Description:</b> Effort enhances BACN information processing and communications capabilities including but not limited to development and integration of Low Earth Orbit SATCOM (Starlink or equivalent), Common Tactical Edge Network (CTEN), and replacement of the Airborne Executive Processor (AEP). This effort includes improvements to BACN resiliency such as the addition of new emerging waveforms and communication systems and design efforts to change the form, fit, and function of the capability such as but not limited to roll on roll off and modular OMS. Funds for design, development, integration, testing and certification of modifications are required to incorporate these capabilities as well as meet cybersecurity certification requirements across the</p>	-	0.000	0.850	-	0.850

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<p>BACN payload and ground support systems. These efforts are required to support emerging communications requirements for highly contested environments and sophisticated threats.</p> <p><b>FY 2024 Plans:</b> New Start in FY2025</p> <p><b>FY 2025 Base Plans:</b> -Initiate design and development of modifications to incorporate resiliency capabilities as well as meet cybersecurity certification requirements across the BACN payload and ground support systems.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Increase in FY2025 due to effort being a new start in FY 2025.</p>					
<p><b>Title:</b> MIDS JTRS BU3 Integration</p> <p><b>Description:</b> MIDS JTRS BU3 fields MIDS MOD Increment 2 software along with current enhancements CCR, CMN, and LET. In addition, data link efficiencies (i.e., Timeslot Reallocation (TSR), External Time Reference (ETR), and Link 16 (Voice)) provide the tools necessary for modernized network designs in support of COCOM information exchange requirements.</p> <p><b>FY 2024 Plans:</b> -Provide engineering design and integration methods for new MIDS-JTRS BU3 technology on new and existing E-11A payloads. Effort includes test and integration into the BACN E-11A payload. Due to aircraft being civilian derivative, integration efforts will require testing to assure/maintain airworthiness and complete certifications as required.</p> <p><b>FY 2025 Base Plans:</b> -Will begin testing compatibility with other payload systems following initial integration and aircraft-level compatibility testing.</p> <p>-Will produce post-test documentation to support authority to operate upgraded system.</p> <p><b>FY 2025 OCO Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p>	0.000	4.024	1.335	0.000	1.335

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Decrease in FY2025 is the result of reduction in budget request in FY 2025 due to bulk of design and integration work occurring in FY24, with FY25 representing a reduced workload to finalize testing and complete documentation.					
<p><b>Title:</b> BACN Weapon System Open Mission Systems (OMS)</p> <p><b>Description:</b> Developmental enhancements to the BACN weapon system capability required for integration of updated enterprise terminals as well as advanced capabilities under development but not yet available. These enhancements may include small scale enhancements to BACN weapon system payload, aircraft, and/or ground sites to enable increased operational effectiveness and/or efficiencies.</p> <p>OMS is the standard for system design that provides significant cost savings / avoidance, ensures rapid deployment of new technologies and preserves interoperability within fielded or future systems-of systems. OMS is the leading-edge plug-n-play technology to rapidly meet warfighter requirements.</p> <p><b>FY 2024 Plans:</b> -Begin Open Mission System (OMS) development efforts to modify the current BACN system's payload software and other components to ensure the weapon system can incorporate and interface with OMS equipment, such as but not limited to the Common Tactical Edge Network (CTEN) or a comparable OMS interface. -Developmental efforts may include but are not limited to analysis, early system engineering, and early developmental/prototype activities as well as full scale fielded developments necessary to transform the BACN weapon system such that it incorporates an OMS compliant interface with a more modular design that ensures major system components interface with widely supported standards and allows capabilities to be incrementally added/removed/replace throughout system lifecycle.</p> <p><b>FY 2025 Base Plans:</b> No funding requested.</p> <p><b>FY 2025 OCO Plans:</b> Decrease due to no funding requirement in FY 2025.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>	0.000	0.733	0.000	0.000	0.000
<p><b>Title:</b> M-Code Military Global Positioning System (MilGPS)</p>	0.000	0.650	0.000	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<p><b>Description:</b> Effort enhances MilGPS, including development and integration of emerging GPS and/or PNT technologies such as M-Code, testing, &amp; complete certification. Funds engineering and integration of M-Code GPS capabilities that will replace P-Y code, which is already in use the payload. All E-11s existing and procured are required to have M-Code GPS and this effort will provide enhanced military grade GPS capabilities to the full BACN fleet. Substantial analysis, design, systems engineering, and developmental activities are required to integrate capabilities onboard existing E-11s as the aircraft are civilian derivative aircraft.</p> <p><b>FY 2024 Plans:</b> -Provide engineering and integration for MilGPS M-Code technology on new and existing E-11s. Effort includes test and integration into the BACN E-11A payload. Due to aircraft being civilian derivative, integration efforts will require extensive testing to assure/maintain airworthiness and complete certifications as required.</p> <p><b>FY 2025 Base Plans:</b> N/A</p> <p><b>FY 2025 OCO Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Decrease due to no requirement in FY 2025.</p>					
<p><b>Title:</b> BACN Software Upgrades</p> <p><b>Description:</b> BACN has a continuous need for software upgrades. Effort enhances BACN information processing and communications capabilities including but not limited to development and integration of Multi-User Objective System (MUOS), Protected Tactical Waveform (PTW), Low Earth Orbit SATCOM, Common Tactical Edge Network (CTEN) incorporation of software updates for new radios, and replacement of the Airborne Executive Processor (AEP). Funds for design, development, integration, testing and certification of modifications are required to incorporate these capabilities as well as meet cybersecurity certification requirements and resolve risk and identified software deficiencies across the BACN payload and ground support systems. These efforts are required to support emerging communications requirements in complex and secure military environments.</p> <p>This thrust is a roll-up of all software efforts. The major software effort service pack upgrade 3.3.3 completes in FY 2024. In FY2025, efforts will continue with systems engineering, design, development, and integration to</p>	-	21.382	21.365	0.000	21.365

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<p>support incorporation of AEP replacement, PTW, and other advanced communications waveforms and radio interfaces.</p> <p><b>FY 2024 Plans:</b> -Provide software updates and integration to incorporate advanced processing equipment, communications waveforms and radio interfaces.</p> <p>-Provide systems engineering, design, development, and integration to support incorporation of MUOS. This is a two-year effort.</p> <p><b>FY 2025 Base Plans:</b> -Will continue to provide software updates and integration to incorporate advanced processing equipment, communications waveforms and radio interfaces. Continuation of MUOS effort to include testing, certification and deployment.</p> <p>-Will provide additional systems engineering, design, development, and integration to support incorporation of AEP replacement, PTW, and other advanced communications waveforms and radio interfaces. This is a three-year effort.</p> <p><b>FY 2025 OCO Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Decrease between FY2024 and FY2025 is negligible.</p>					
<p><b>Title:</b> BACN Payload Operations and Maintenance Trainer</p> <p><b>Description:</b> This effort supports development and installation of a Payload Maintenance Trainer (PMT) at the BACN Main Operating Base (MOB). The BACN PMT will support organic, "Blue Suit" BACN familiarization and BACN Payload maintenance training. The PMT will be representative of the on-aircraft BACN Payload installation and also include maintenance training for associated BACN Payload ground systems. The PMT will facilitate transition from Contractor Logistics Support (CLS) to organic BACN Payload system maintenance.</p> <p><b>FY 2024 Plans:</b> No requirement in FY 2024.</p> <p><b>FY 2025 Base Plans:</b></p>	-	0.000	0.900	-	0.900

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
-Initiate the development and installation of a Payload Maintenance Trainer (PMT) at the Robins AFB that will be representative of the on-aircraft BACN Payload installation and also include maintenance training for associated BACN Payload ground systems. The requirement will facilitate the transition from Contractor Logistics Support (CLS) to organic BACN Payload system maintenance.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Increase due to New Start in FY2025					
<b>Title:</b> Program Support Costs (PSC)  <b>Description:</b> Various support costs to include: Direct Cite Authorization Travel Assessments FFRDC A&AS  <b>FY 2024 Plans:</b> -Provide essential support for management and oversight required to gather, evaluate, execute, and manage program requirements. This support is essential for continued research, development, test, and evaluation of BACN.  <b>FY 2025 Base Plans:</b> -Will provide essential support for management and oversight required to gather, evaluate, execute, and manage program requirements. This support is essential for continued research, development, test, and evaluation of BACN.  <b>FY 2025 OCO Plans:</b> N/A  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Increase in FY2025 due to inflation.	0.000	2.250	2.358	0.000	2.358
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	30.301	26.808	0.000	26.808

<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A
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Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207238F / E-11A	Project (Number/Name) 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)

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

**Remarks**

**D. 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 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0207238F / E-11A				675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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 Resiliency Solutions	TBD	Not specified. : TBD	-	-		0.000		0.850	May 2025	-		0.850	Continuing	Continuing	-
BLOS Communications Waveforms Enhancements	TBD	Northrop Grumman : San Diego, CA	-	-		1.262	Mar 2024	0.000	Jul 2025	-		0.000	Continuing	Continuing	-
MIDS JTRS BU3 Integrations	SS/CPFF	Northrop Grumman : San Diego, CA	-	-		4.024	Mar 2024	1.335	Jan 2025	-		1.335	Continuing	Continuing	-
OMS	SS/CPFF	Not specified. : TBD	-	-		0.733	Mar 2024	0.000	Jul 2025	-		0.000	Continuing	Continuing	-
M-Code MiIGPS	SS/CPFF	Northrop Grumman : San Diego, CA	-	-		0.650	Jun 2024	0.000	Jul 2025	-		0.000	Continuing	Continuing	-
BACN Payload Operations and Maintenance Trainer	SS/CPFF	Northrop Grumman : San Diego, CA	-	-		0.000		0.900	Apr 2025	-		0.900	Continuing	Continuing	-
BACN Software Upgrades	SS/CPFF	Northrop Grumman : San Diego, CA	-	-		21.382	Jan 2024	21.365	Nov 2024	-		21.365	Continuing	Continuing	-
<b>Subtotal</b>			-	-		28.051		24.450		-		24.450	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
Direct Cite Authorization	TBD	Civilian Pay : TBD	-	-		0.663	Dec 2023	0.783	Dec 2024	-		0.783	Continuing	Continuing	-
Travel	TBD	Not specified. : TBD	-	-		0.046	Jan 2024	0.046	Jan 2025	-		0.046	Continuing	Continuing	-
Assessments	C/TBD	TBD : TBD	-	-		0.448	Jan 2024	0.406	Jan 2025	-		0.406	Continuing	Continuing	-
FFRDC	SS/CPAF	MITRE Corp. : Bedford, MA	-	-		0.888	Oct 2023	0.912	Oct 2024	-		0.912	Continuing	Continuing	-
A&AS	C/CPAF	ARS, Inc. : Beavercreek, OH	-	-		0.205	Mar 2024	0.211	Mar 2025	-		0.211	Continuing	Continuing	-
<b>Subtotal</b>			-	-		2.250		2.358		-		2.358	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	-		30.301		26.808		-		26.808	Continuing	Continuing	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2025 Air Force							<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A			<b>Project (Number/Name)</b> 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)			

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
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**Remarks**  
 BACN Payload Maintenance Trainer and BACN Resiliency Solutions budget requests in FY 2025 are to initiate the transition of contractor logistics support (CLS) of payload training to Air Force personnel and start the development and integration of new waveforms and communications systems to the capability.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
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

<b>BACN Systems</b>	
BACN Resiliency Solutions	
BACN Payload Operations and Maintenance Trainer	
BLOS Communications Waveform Enhancements	
MIDS JTRS BU3 Integration	
OMS	
M-Code MilGPS	
BACN Software Upgrades	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207238F / E-11A	<b>Project (Number/Name)</b> 675383 / BATTLEFIELD AIRBORNE COMM NODE (BACN)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>BACN Systems</b>				
BACN Resiliency Solutions	3	2025	4	2029
BACN Payload Operations and Maintenance Trainer	3	2025	4	2029
BLOS Communications Waveform Enhancements	4	2024	4	2025
MIDS JTRS BU3 Integration	2	2024	4	2025
OMS	3	2024	3	2025
M-Code MilGPS	3	2024	4	2025
BACN Software Upgrades	2	2024	4	2029