Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army											Date: February 2018	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*							
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	-	4.166	9.910	15.970	-	15.970	12.595	0.431	14.221	23.631	0.000	80.924
593: *Joint Battle Command - Platform (JBC-P)*	-	4.166	9.910	15.970	-	15.970	12.595	0.431	14.221	23.631	0.000	80.924

A. Mission Description and Budget Item Justification

Joint Battle Command - Platform (JBC-P) is the cornerstone of Joint Forces' Command and Control (C2), Situational Awareness (SA), and Communications. JBC-P provides secure Blue Force Tracking (BFT) capability at the Platform and Command Post levels, and continuous near-real-time identification of friendly locations, reported enemy, and hazardous locations populating the tactical Common Operating Picture (COP). JBC-P enables Joint, Net-Centric C2/Battle Command by seamlessly passing/sharing relevant information vertically and horizontally, within all tactical levels of command and control. JBC-P is designed to be used on L-Band Satellite Networks and terrestrial radios.

PdM JBC-P, under PM Mission Command (MC), is collaborating with the Communications-Electronics Research, Development and Engineering Center's (CERDEC) Space and Terrestrial Communications Directorate (S&TCD) on evolving BFT network. Systems engineering studies/planning activities are underway to develop the evolution path of the BFT network. In addition, there are two RDT&E contractual efforts underway for FY 2018 and FY 2019 that will aid in assessing the feasibility of reusing existing BFT-2 transceivers (hardware) and replacing them with advanced, government owned hardware/software. The goal is to have a BFT-3, full and open solicitation to industry, ready for FY 2020.

To better understand how potential changes to the BFT network would affect overall operations, S&TCD is working on developing a model of the current BFT-2 waveform to test in the BFT portion of their Network Test Lab. This Test Lab provides the Government the ability to test proposed fixes, conduct regression testing of future Software and Firmware releases, and replicate any problems the system may experience without impacting the operational network.

FORSCOM users have identified a need for an expeditionary JBC-P capability to better connect the Lower Tactical Internet (LTI) to the BFT network when dismounted. PdM JBC-P has partnered with CERDEC's Command, Power and Integration Directorate to develop the capability.

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army					Date: February 2018
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*		
B. Program Change Summary ($ in Millions)	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**
Previous President's Budget	4.245	9.910	5.618	-	5.618
Current President's Budget	4.166	9.910	15.970	-	15.970
Total Adjustments	-0.079	0.000	10.352	-	10.352
• Congressional General Reductions	-0.001	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.078	-			
• Adjustments to Budget Years	-	-	10.352	-	10.352

Change Summary Explanation

FY 2017 change reflects SBIR/STTR and FFRDC transfer.

FY 2019 change reflects anticipated completion of design efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) 593 / *Joint Battle Command - Platform (JBC-P)*	

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
593: *Joint Battle Command - Platform (JBC-P)*	-	4.166	9.910	15.970	-	15.970	12.595	0.431	14.221	23.631	0.000	80.924
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Battle Command - Platform (JBC-P) program is the cornerstone of Joint Forces Command and Control (C2) Situational Awareness (SA) and communications. JBC-P includes a network which enables the movement of data and provides secure Blue Force Tracking (BFT) capability in Platforms and Command Posts, providing soldiers and commanders a map-based Common Operating Picture of the battlefield, as a result, reducing fratricide.

PdM JBC-P, under PM Mission Command (MC), is collaborating with the Communications-Electronics Research, Development and Engineering Center's (CERDEC) Space and Terrestrial Communications Directorate (S&TCD) on evolving BFT network. Systems engineering studies/planning activities are underway to develop the evolution path of the BFT network. In addition, there are two RDT&E contractual efforts underway for FY 2018 and FY 2019 that will aid in assessing the feasibility of reusing existing BFT-2 transceivers (hardware) and replacing it with advanced, government owned hardware/software. The goal is to have a BFT-3, full and open solicitation to industry, ready for FY 2020.

To better understand how potential changes to the BFT network would affect overall operations, funding was increased in both FY17 and FY18 to assist PdM JBC-P to fully model the operational BFT network; S&TCD is working on developing a model of the current BFT-2 waveform to test in the BFT portion of their Network Test Lab. This Test Lab provides the Government the ability to test proposed fixes, conduct regression testing of future Software and Firmware releases, and replicate any problems the system may experience without impacting the operational network.

FORSCOM users have identified a need for an expeditionary JBC-P capability to better connect the Lower Tactical Internet (LTI) to the BFT network when dismounted. PdM JBC-P has partnered with CERDEC's Command, Power and Integration Directorate to developed capability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Software Development	0.355	0.200	-	-	-
Description: Develop capabilities, product applications, platform interoperability, and system services across the JBC-P family of systems, to include the development of capabilities to meet Key Performance Parameters (KPPs), and other system attributes. Develop Multi-Level Security Domains for Network, Users, and Information.					
FY 2018 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Full fielding of JBC-P hardware with 1.6.0.6 software will continue. There is no further significant software development required beyond potential software patching to mitigate issues that may occur in the field. JBC-P will move into Post Deployment Software Support (PDSS) in FY19. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Software development not applicable in FY19.					
Title: Software/Systems Engineering ***Description:*** Perform Software/Systems Engineering in support of the development of JBC-P capabilities, applications, and services, to include, but not limited to, conducting engineering studies, architecture development (both software and network), system analyses, technical readiness assessments, technical interchange meetings/events, and development of related reports and other deliverables. ***FY 2018 Plans:*** Continued system engineering efforts for JBC-P balance of CDD threshold requirements and support of the Battle Command product line. Conduct software systems engineering for the integration of the BFT 2.0 Transceiver Waveform Model, Virtual Satellite Network Control Center (SNCC), Virtual Network Services Gateway (NSG), and continue Modeling and Simulation (M&S) for Systems Engineering, Architecture, and Component Characterization & Validation, Satellite Communications (SATCOM). ***FY 2019 Base Plans:*** Continued system engineering efforts for JBC-P balance of CDD threshold requirements and support of the Mission Command product line. Conduct Systems Engineering, open systems architecture design, and Component Characterization & Validation for next generation BFT; to include the integration & interoperability of the BFT 2.0 Transceiver, Satellite Network Control Center (SNCC), Satellite Ground Station (SGS), and Waveform/Network Virtualization for the BFT 2 network. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase supports waveform/network virtualization for the BFT 2 network.	2.562	7.810	14.170	-	14.170
Title: Test, Evaluation and Integration ***Description:*** Plan and conduct system software acceptance testing from CDD for baseline products, Integration Events (i.e., tests and assessments) in support of the JBC-P Family of Systems, to include Risk Reduction Events, vulnerability testing, and Army Interoperability Certification (AIC) testing. MCE test efforts are exclusively funded through the MCE funding line. .	0.030	0.600	0.500	-	0.500

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY 2018 Plans: Will continue to conduct testing on enhancements to the JBC-P system resulting from integration of the BFT 2.0 Transceiver Waveform Model, Virtual Satellite Network Control Center (SNCC), Virtual Network Services Gateway (NSG), and Modeling and Simulation (M&S) for Systems Engineering, Architecture, and Component Characterization & Validation, Satellite Communications (SATCOM). ***FY 2019 Base Plans:*** Will continue to conduct testing on enhancements to the BFT/JBC-P network, to include third party component (transceiver) characterization, and validation of the next generation BFT. Continue to develop a lab based operational risk reduction of the currently fielded BFT 1 & BFT 2 network, to Include the Satellite Network Control Center (SNCC), Satellite Ground Station (SGS), and Waveform Virtualization. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No change.					
Title: Program Management ***Description:*** JBC-P Program Management, including technical, logistics, and business staff oversight. ***FY 2018 Plans:*** Will continue to provide technical, logistics and business oversight for JBC-P FoS software development and system engineering activities. Program Management includes funds execution, contract management, and logistical support the BFT Network Evolving and eXtending Transport (NEXT) integrated planning team (IPT). ***FY 2019 Base Plans:*** Will continue to provide technical, logistical, and business oversight for JBC-P architecture development and system engineering activities. Program Management includes funds execution, contract management, and logistical support for the BFT-3 (Previously BFT Network Evolving and eXtending Transport (NEXT)) integrated planning team (IPT) & consortium (industry & academia).	1.219	1.300	1.300	-	1.300
Accomplishments/Planned Programs Subtotals	4.166	9.910	15.970	-	15.970

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
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C. Other Program Funding Summary ($ in Millions)

Line Item	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
• W61990: *JOINT BATTLE COMMAND - PLATFORM (JBC-P)*	227.573	282.549	405.239	26.146	431.385	269.681	257.952	152.827	150.166	0.000	1,772.133

Remarks

Procurement funding in Fiscal Year 2016 through 2023 (Base funding) is designated for the procurement, fielding, and program management of JBC-P Family of Systems including JBC-P and JBC-P Log.

D. Acquisition Strategy

The JBC-P Capabilities Development Document in lieu of Capabilities Production Document (CDD ILO CPD) was Joint Requirements Oversight Council (JROC) approved March 2013. Completed Initial Operational Test & Evaluation (IOT&E) as part of Network Integration Evaluation (NIE) 13.2 in 3QFY2013. The IOT&E tested the JBC-P system software on existing FBCB2 hardware (non-dismountable vehicle systems) and future production-representative hardware. On completion of Army Interoperability Certification (AIC) and Joint Interoperability Test Certification (JITC), MDA authorized Full Rate Production (FRP) in 1QFY2014. First unit equipped (FUE) was successfully conducted 3QFY2015.

Developmental efforts are being performed through intra-government collaboration. System engineering efforts are being performed by CERDEC's Space and Terrestrial Communications Directorate (S&TCD); Command, Power and Integration (CP&I) & the Intelligence and Information Warfare Directorate (I2WD). Hardware along with fielding, training and field support efforts are obtained through existing competitively awarded contracts.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) 593 / *Joint Battle Command - Platform (JBC-P)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBC-P Software Development	MIPR	Multiple : Multiple	66.963	0.355	Dec 2016	0.200		-		-		-	Continuing	Continuing	-
JBC-P Software/System Engineering	MIPR	Multiple : Multiple	37.253	2.562	Dec 2016	7.810		14.170		-		14.170	Continuing	Continuing	-
		Subtotal	104.216	2.917		8.010		14.170		-		14.170	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (Gov't-Core)	Sub Allot	PM JBC-P : Aberdeen Proving Ground (APG), MD	5.711	1.219	Oct 2016	1.300		1.300		-		1.300	Continuing	Continuing	-
		Subtotal	5.711	1.219		1.300		1.300		-		1.300	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop and Conduct Tests and Assessments	MIPR	Multiple : Multiple	26.363	0.030	Feb 2017	0.600		0.500		-		0.500	Continuing	Continuing	-
		Subtotal	26.363	0.030		0.600		0.500		-		0.500	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	136.290	4.166		9.910		15.970		-		15.970	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

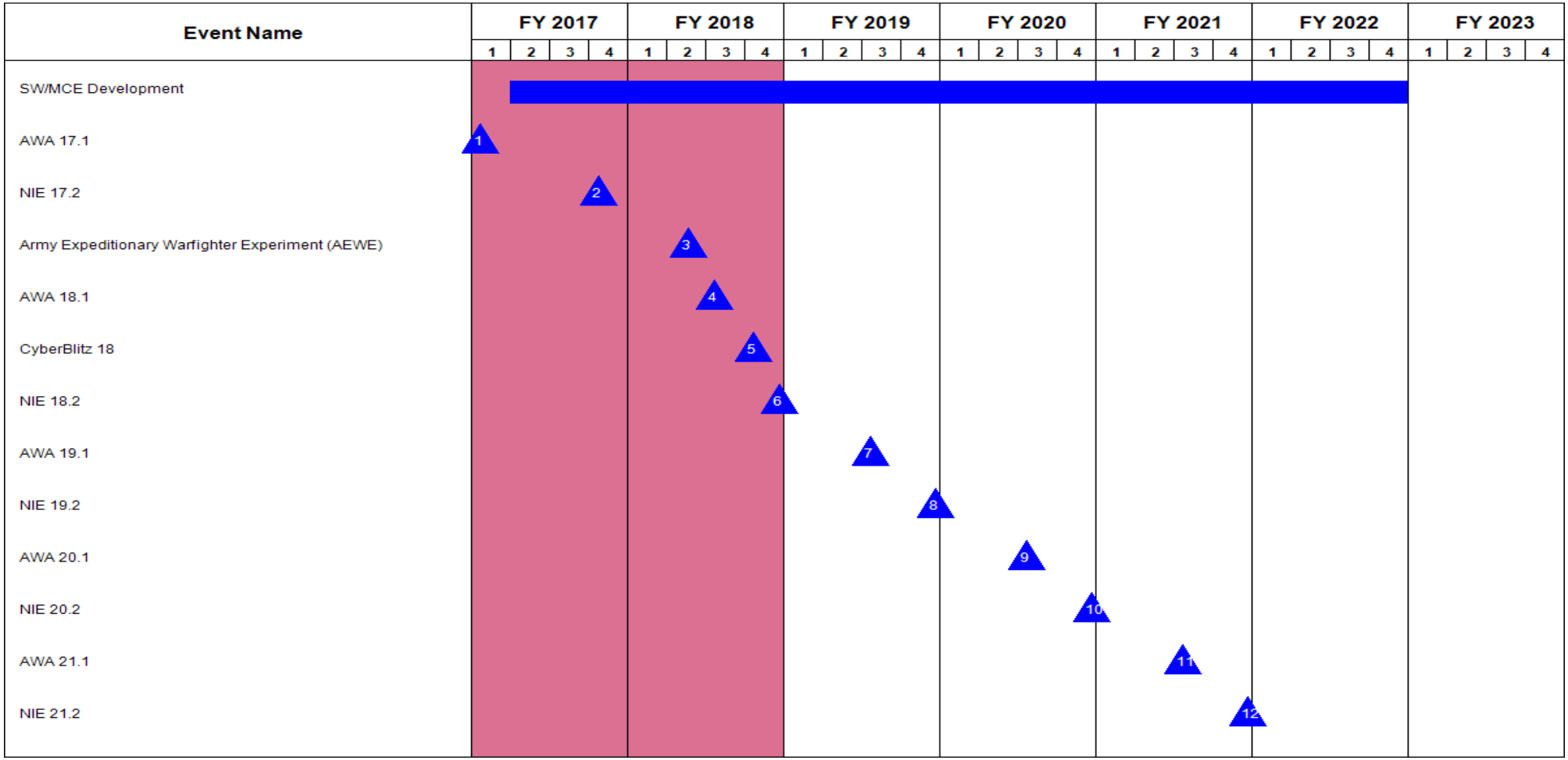

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

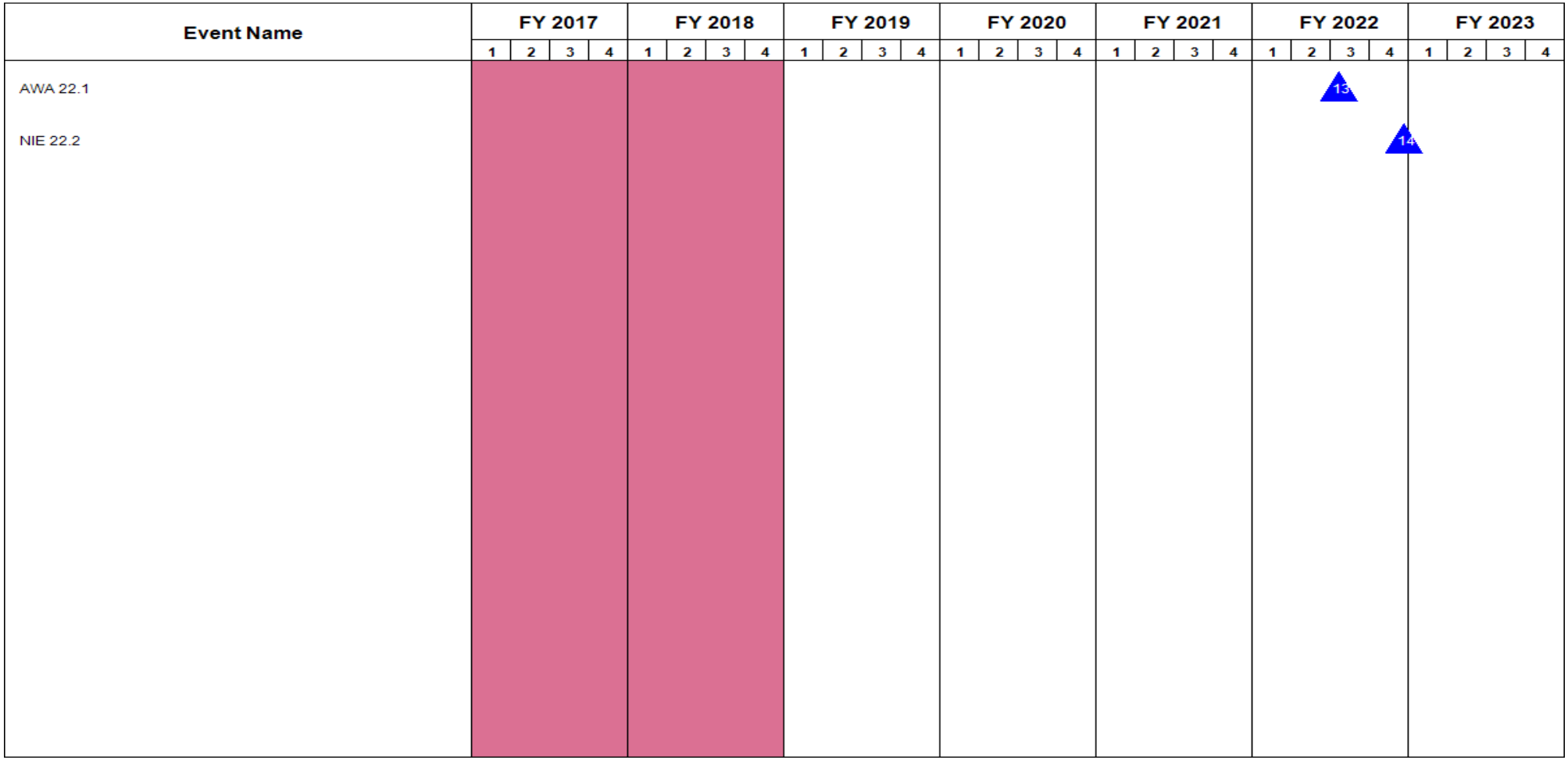

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SW/MCE Development	1	2010	4	2022
AWA 17.1	1	2017	1	2017
NIE 17.2	4	2017	4	2017
Army Expeditionary Warfighter Experiment (AEWE)	2	2018	2	2018
AWA 18.1	3	2018	3	2018
CyberBlitz 18	4	2018	4	2018
NIE 18.2	4	2018	4	2018
AWA 19.1	3	2019	3	2019
NIE 19.2	4	2019	4	2019
AWA 20.1	3	2020	3	2020
NIE 20.2	4	2020	4	2020
AWA 21.1	3	2021	3	2021
NIE 21.2	4	2021	4	2021
AWA 22.1	3	2022	3	2022
NIE 22.2	4	2022	4	2022