Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army											Date: February 2018	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605380A *I AMF Joint Tactical Radio System (JTRS)*							
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	-	4.088	8.965	15.984	-	15.984	43.457	8.913	9.029	0.000	0.000	90.436
EG6: *Small Airborne Networking Radio (SANR)*	-	4.088	8.965	15.984	-	15.984	43.457	8.913	9.029	0.000	0.000	90.436

A. Mission Description and Budget Item Justification

The AMF radios are software programmable, multi-band, multi-mode, mobile ad hoc networking radios, providing simultaneous voice and data communications for Army Aviation platforms. The radios will operate in networks supporting the Common Operating Picture, Situational Awareness, and interoperability of Mission Command systems throughout the battlefield. AMF radios will ensure the Soldier's ability to communicate both horizontally and vertically via voice and data within all mission areas and Common Operating Environment. AMF radios will operate waveforms that are deployed by Joint Forces today, and will introduce networking waveforms to the Aviation community that will enable interoperability between air and ground forces and transport operational and Mission Command information through the tactical network. AMF radios will help close capability gaps by extending data networking to company and below echelons, enabling network services to the platform and connecting Army Aviation platforms to Army ground and Joint air network domains.

Per MDA direction, the AMF Program will procure radios as Non-Developmental Items. FY 2019 RDTE funding allocated to SANR (Project EG6) supports planned program activities, such as, source selection testing and acquisition activities in support of contract award and continued development of documentation to support Milestone C. As part of the CSA Network Review, the Network Cross Functional Team (CFT) is reviewing the current network portfolio, to include review of the SANR program path and Capability Production Document. The SANR Program path forward is expected to evolve based on outcomes of the CSA Network Review and Network CFT efforts, as part of a modernized Army network.

FY 2019 RDTE funds also support the procurement of Link-16 handheld radios for experimentation and concept refinement for air-ground integration, in coordination with the Network CFT.

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army					Date: February 2018
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605380A *I AMF Joint Tactical Radio System (JTRS)*		
B. Program Change Summary ($ in Millions)	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**
Previous President's Budget	5.028	8.965	44.938	-	44.938
Current President's Budget	4.088	8.965	15.984	-	15.984
Total Adjustments	-0.940	0.000	-28.954	-	-28.954
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.163	-			
• Adjustments to Budget Years	-	-	-28.954	-	-28.954
• Other Adjustments 2	-0.777	-	-	-	-

Change Summary Explanation

FY 2019 program funding was reduced to reflect program status awaiting CPD approval. The AROC is scheduled for 13 April 2018. Contract award is now planned in FY 2020.

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 0605380A / *AMF Joint Tactical Radio System (JTRS)*				Project (Number/Name) EG6 / *Small Airborne Networking Radio (SANR)*			
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**
EG6: *Small Airborne Networking Radio (SANR)*	-	4.088	8.965	15.984	-	15.984	43.457	8.913	9.029	0.000	0.000	90.436
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Prior to FY 2014, the Airborne Maritime/Fixed Station (AMF) Joint Tactical Radio System (JTRS) was funded under Navy PE 0604280N, aligned under the Navy JTRS Programs. In accordance with a July 11, 2012 Acquisition Decision Memorandum (ADM), the JTRS Program of Record transitioned to a Military Department-managed program. AMF is now managed by Program Executive Office Command, Control and Communications-Tactical, under Project Manager Tactical Radios, and funded by Army PE 0605380A. On May 2, 2014, the Milestone Decision Authority (MDA), Under Secretary of Defense for Acquisition, Technology, and Logistics, issued an ADM that designated Small Airborne Link 16 Terminal (SALT) and Small Airborne Networking Radio (SANR) as subprograms under the AMF Program. In FY 2015, Project EA9 represented the total Airborne Maritime Fixed Small Airborne (AMF-SA, or SALT) RDT&E budget. In FY 2016, funding was allocated between the SALT (Project EA9) and SANR (Project EG6) subprograms. The SALT subprogram was closed out during FY 2016. Only the SANR subprogram (Project EG6) is funded in FY 2017 and beyond under AMF JTRS.

A. Mission Description and Budget Item Justification

Per MDA direction, AMF JTRS will procure SANR radios as Non-Developmental Items (NDI). The SANR is a two-channel, software-defined, National Security Agency Type 1 certified networking radio providing seamless real-time information for operation in mobile and dynamic combat environments that will meet tactical communications requirements as validated by the Army Aviation community. SANR will provide increased data throughput to Army Aviation platforms via advanced networking capabilities supporting Mid-Tier and Lower Tier tactical networks, and maintain Single Channel Ground and Airborne Radio System (SINCGARS) capability. SANR will replace the current SINCGARS radios on Army Aviation platforms. SANR is planned for implementation on the following platforms: Apache (AH-64E), Black Hawk (UH-60V, UH-60M, HH-60M, and MH-60M), Chinook (CH-47F and MH-47G), and Gray Eagle Unmanned Aircraft System (MQ-1C) aircraft. SANR will enhance and further enable the ability of the maneuver commander to integrate and synchronize aviation forces with land based operational forces. SANR, employed on Army aviation platforms, will enable aviation combat elements (Combat Aviation Brigades, Theater Aviation Brigades, and Special Operations Aviation Regiment) to better utilize the inherent versatility of airborne communications as a complement to the unique capabilities of the other combat arms. SANR will give commanders enhanced Situational Awareness and Mission Command in a package that provides a more responsive means of directing aircraft to match changing maneuver forces situations and missions.

FY 2019 RDTE funding allocated to SANR supports planned program activities, such as, source selection testing and acquisition activities in support of contract award and continued development of documentation to support Milestone C. As part of the CSA Network Review, the Network Cross Functional Team (CFT) is reviewing the current network portfolio, to include review of the SANR program path and Capability Production Document. The SANR Program path forward is expected to evolve based on outcomes of the CSA Network Review and Network CFT efforts, as part of a modernized Army network.

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 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EG6 / *Small Airborne Networking Radio (SANR)*

FY 2019 RDTE funds also support the procurement of Link-16 handheld radios for experimentation and concept refinement for air-ground integration, in coordination with the Network CFT.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: Small Airborne Networking Radio (SANR) ***Description:*** Small Airborne Networking Radio (SANR) ***FY 2018 Plans:*** With FY 2018 funding, the program will continue acquisition activities in support of Acquisition Strategy and associated required documentation approval, market research and final documentation for request for proposal release, and source selection planning in anticipation of FY19 source selection activities. ***FY 2019 Plans:*** FY 2019 provides funding necessary to conduct source selection testing and acquisition activities in support of contract award. SANR source selection efforts include evaluation of proposals (document review), test article integration and test execution for each offeror (source selection testing), and evaluation of all selection factors. The program will also continue to develop documentation to support Milestone C. These planned program activities may be influenced by the CSA Network Review and Network Cross Functional Team (CFT) review of the SANR program path forward. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** FY 2019 program funding was reduced to reflect program status awaiting CPD approval.	4.088	8.965	5.984
Title: Air-Ground Integration Experimentation ***Description:*** The Army is considering the expanded use of Link-16 to enable Army aviation to enter the joint/coalition air picture; to create low-latency, fused, air-ground pictures in the command post environment; and to provide Joint fires observers the ability to conduct jam-resistant, digital, coalition, close air support coordination. The Army will buy 160 Link-16 handheld radios to equip four brigades, enabling them to conduct experimentation and develop concepts of operation in order to refine requirement for an objective capability. ***FY 2019 Plans:*** With FY 2019 RDTE funds, the Army will procure 160 Link-16 handheld radios to equip four brigades, enabling them to conduct experimentation and develop concepts of operation in order to refine requirement for an objective capability. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increased funding for procurement of Link 16 handheld radios for air-ground integration experimentation and requirement refinement.	-	-	10.000
Accomplishments/Planned Programs Subtotals	4.088	8.965	15.984

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 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EG6 / *Small Airborne Networking Radio (SANR)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

SANR OPA funding, not reflected in this form, includes $9.878 million in FY 2020, $67.043 million in FY 2021, $141.233 million in FY 2022, and $168.629 million in FY 2023.

D. Acquisition Strategy

The SANR acquisition strategy is to procure small airborne networking radios for the Apache, Blackhawk, Chinook, and Gray Eagle aircraft. SANR will be capable of operating advanced networking and SINCGARS waveforms. SANR will replace Army Aviation platform SINCGARS ARC-201D radios. The SANR acquisition strategy employs full and open competition using an NDI procurement approach that leverages prior industry and Government investment in software-defined radios. The strategy supports a concept in which NDI radios can be selected from a qualified vendor that meet the AMF SANR CPD requirements.

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 0605380A / *AMF Joint Tactical Radio System (JTRS)*	Project (Number/Name) EG6 / *Small Airborne Networking Radio (SANR)*	

Management Services ($ 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
AMF-SA Business Operations Management and Support	Various	Various : Various	2.162	1.974		3.830		1.779		-		1.779	Continuing	Continuing	-
		Subtotal	2.162	1.974		3.830		1.779		-		1.779	Continuing	Continuing	N/A

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
AMF-SA - System Engineering and Requirements Validation	Various	Various : Various	1.153	1.176		2.913		2.552		-		2.552	Continuing	Continuing	-
AMF-SA - Air-Ground Integration Experimentation	Various	Various : Various	-	-		-		10.000		-		10.000	Continuing	Continuing	-
		Subtotal	1.153	1.176		2.913		12.552		-		12.552	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
AMF-SA - Logistics Support	Various	Various : Various	0.544	0.423		0.634		0.344		-		0.344	Continuing	Continuing	-
		Subtotal	0.544	0.423		0.634		0.344		-		0.344	Continuing	Continuing	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 0605380A / *AMF Joint Tactical Radio System (JTRS)*	Project (Number/Name) EG6 / *Small Airborne Networking Radio (SANR)*	

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
AMF-SA - Test and Evaluation and Test Support	Various	Various : Various	1.099	0.515		1.588		1.309		-		1.309	Continuing	Continuing	-
AMF-SA- WNW Demonstration	Various	Various/AWA 17.1 : EPG	3.072	-		-		-		-		-	0.000	3.072	-
		Subtotal	4.171	0.515		1.588		1.309		-		1.309	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	8.030	4.088		8.965		15.984		-		15.984	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 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EG6 / *Small Airborne Networking Radio (SANR)*

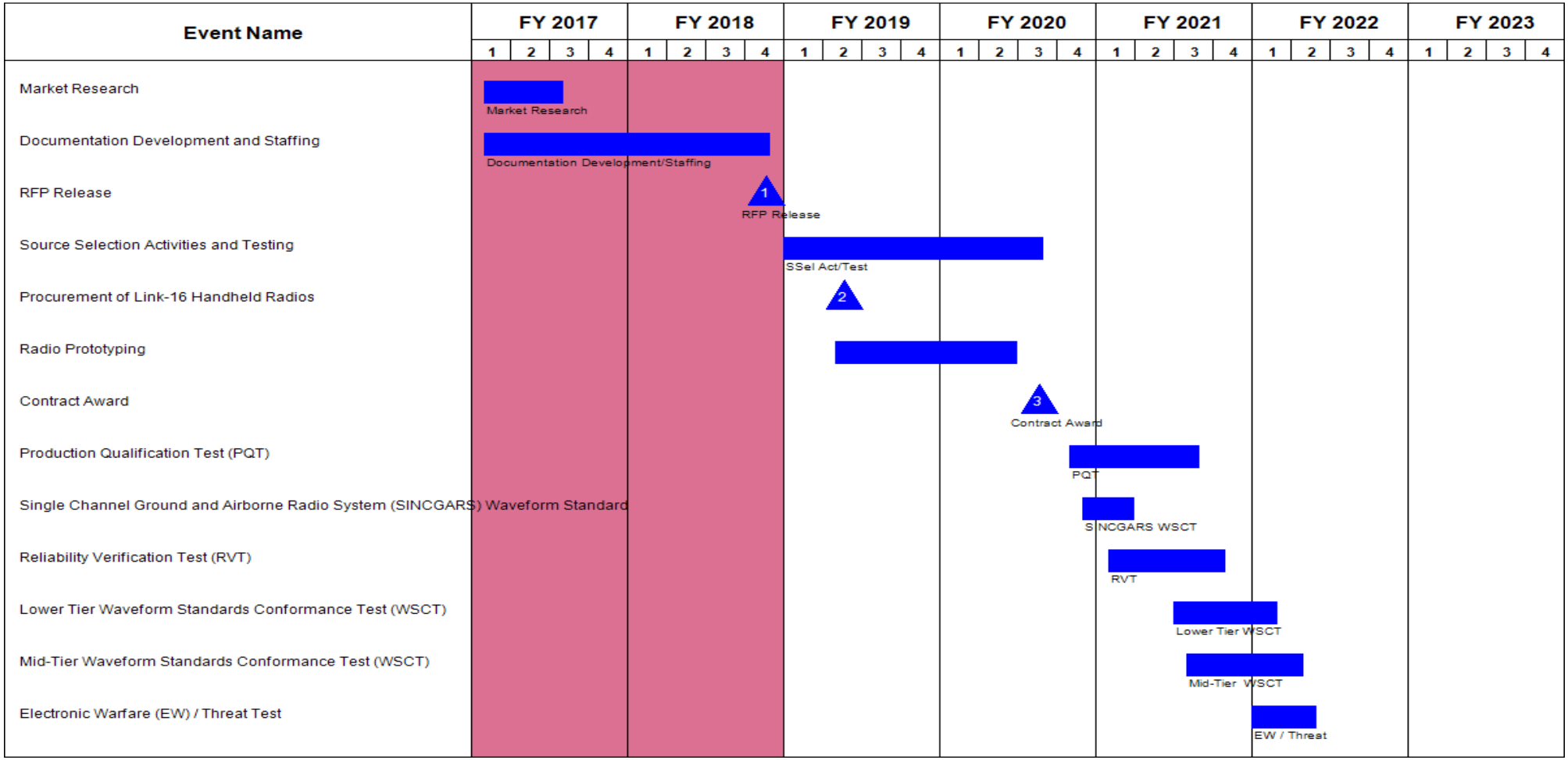

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EG6 / *Small Airborne Networking Radio (SANR)*

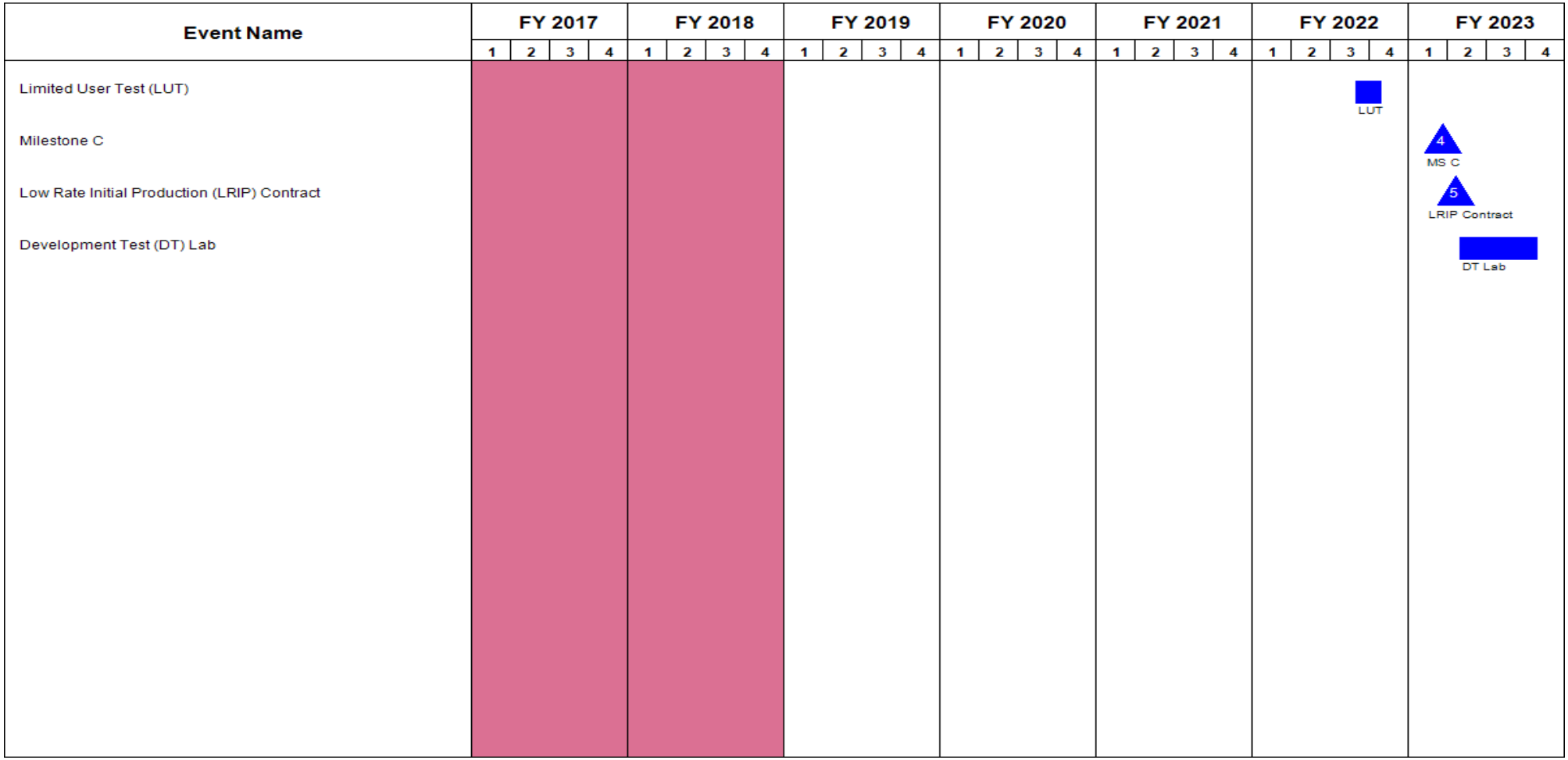

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EG6 / *Small Airborne Networking Radio (SANR)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Market Research	1	2016	3	2017
Documentation Development and Staffing	1	2016	4	2018
RFP Release	4	2018	4	2018
Source Selection Activities and Testing	1	2019	3	2020
Procurement of Link-16 Handheld Radios	2	2019	2	2019
Radio Prototyping	2	2019	2	2020
Contract Award	3	2020	3	2020
Production Qualification Test (PQT)	4	2020	3	2021
Single Channel Ground and Airborne Radio System (SINCGARS) Waveform Standard	4	2020	1	2021
Reliability Verification Test (RVT)	1	2021	4	2021
Lower Tier Waveform Standards Conformance Test (WSCT)	3	2021	1	2022
Mid-Tier Waveform Standards Conformance Test (WSCT)	3	2021	2	2022
Electronic Warfare (EW) / Threat Test	1	2022	2	2022
Limited User Test (LUT)	3	2022	4	2022
Milestone C	1	2023	1	2023
Low Rate Initial Production (LRIP) Contract	2	2023	2	2023
Development Test (DT) Lab	2	2023	4	2023