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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army										Date: March 2019		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0605042A I Tactical Network Radio Systems (Low-Tier)							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	8.845	3.825	35.654	-	35.654	50.297	47.368	26.235	27.610	0.000	199.834
FA1: Manpack Radio	-	1.248	1.957	30.622	-	30.622	39.422	36.335	13.945	15.300	0.000	138.829
FA2: Rifleman Radio (RR)	-	7.597	1.868	5.032	-	5.032	10.875	11.033	12.290	12.310	0.000	61.005

A. Mission Description and Budget Item Justification

The Tactical Network Radio Systems (Low-Tier) supports the Army Network Modernization Strategy Line of Effort 1, Unified Network

The HMS radios are a key component of the Integrated Tactical Network which supports a converged Mission Command Network that operates seamlessly worldwide in any environment. These radios will perform under a standards-based network architecture that unifies enterprise and deployed network capabilities. The near-term goal of the HMS radios is to provide 'secure but unclassified' networking capabilities utilizing next generation tactical radios. The cited work is consistent with Strategic Planning Guidance and the Mission Command Network Modernization Implementation Plan.

The Handheld, Manpack, and Small Form Fit (HMS) radio program is a materiel solution providing software-defined radio systems that are tailorable and scalable to support the Chief of Staff of the Army's "fight tonight" strategy. HMS is an Acquisition Category IC program that encompasses specific requirements to support the U.S. Army, Air Force, Navy, Marine Corps and Special Operations Command communications needs.

HMS provides voice and data communications to the tactical edge/most disadvantaged warfighter with an on-the-move, at-the-halt, and stationary Line of Sight / Beyond Line of Sight capability for both dismounted personnel and platforms. HMS radio systems are software reprogrammable, networkable, multi-mode systems capable of simultaneous voice and data communications.

HMS encompasses the Handheld Radios (one-channel Rifleman Radio and two-channel Leader Radio), Manpack Radio (MP), and Small Form Fit radios. HMS radios will provide voice and support for data services such as text, control graphics, imagery, video, and telemetry to Warfighters and tactical end user devices including handheld, embedded, and larger computing devices, as well as unmanned systems. The program office will continue with the ongoing competition to procure the newest generation of software defined radios capable of running the threshold waveforms, to include MUOS for MP, and will pursue alternative waveforms to reduce the complexity of Mobile AdHoc Networking waveforms, improve spectral efficiency, and seek Electronic Counter-Countermeasures improvements for operations in a contested environment.

The Army intends to test and integrate 2-channel communications technologies, utilizing existing Army 2-channel radio variants (HMS Radios), in support of Air to Ground experimentation. Experimentation includes, but not limited to: concept refinement, characterization, data collection, demos, new kit prototyping, and operational assessments.

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Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0605042A / Tactical Network Radio Systems (Low-Tier)			
B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	20.076	3.829	10.062	-	10.062
Current President's Budget	8.845	3.825	35.654	-	35.654
Total Adjustments	-11.231	-0.004	25.592	-	25.592
• Congressional General Reductions	-0.009	-0.004			
• Congressional Directed Reductions	-8.739	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.040	-			
• SBIR/STTR Transfer	-0.443	-			
• Adjustments to Budget Years	-	-	25.592	-	25.592
Change Summary Explanation					
FY 2020 was increased \$25.592 million to support a network-wide evaluation. The test will assess the effectiveness of HMS systems within the Army network and support materiel release/acquisition milestone decisions.					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605042A / Tactical Network Radio Systems (Low-Tier)				Project (Number/Name) FA1 / Manpack Radio			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
FA1: Manpack Radio	-	1.248	1.957	30.622	-	30.622	39.422	36.335	13.945	15.300	0.000	138.829
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Tactical Network Radio Systems (Low-Tier) supports the Army Network Modernization Strategy Line of Effort 1, Unified Network												
The HMS radios are a key component of the Integrated Tactical Network which supports a converged Mission Command Network that operates seamlessly worldwide in any environment. These radios will perform under a standards-based network architecture that unifies enterprise and deployed network capabilities. The near-term goal of the HMS radios is to provide 'secure but unclassified' networking capabilities utilizing next generation tactical radios. The cited work is consistent with Strategic Planning Guidance and the Mission Command Network Modernization Implementation Plan.												
HMS is structured as a single program of record consisting of several products. The Manpack (MP) radio is a NSA certified Type 1 radio used for transmission of up to SECRET information. The MP is capable of providing two simultaneous channels of secure voice and data communications using SINCGARS, Demand Assigned Multiple Access Satellite Communication, Mobile User Objective System (MUOS), and other advanced networking waveforms. The MP provides range extension and connects soldiers in the lower tier network to the mid-tier network. It is interoperable with legacy waveforms and capable of route and retransmission and cross-banding. The MP provides networking waveforms connectivity, Networked Line of Sight (LOS) / Beyond Line of Sight (BLOS) voice and data communications. The MP will serve as the vehicular and man-packable tactical LOS / BLOS radio.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2018	FY 2019	FY 2020	
Title: Program Management									0.548	0.450	0.550	
Description: PdM HMS Manpack's program management includes overall management of program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning and Integrated Product Team meetings.												
FY 2019 Plans: During this timeframe, will provide overall management and oversight to implement PdM HMS acquisition strategy. Includes Matrix and Contractor support.												
FY 2020 Plans: During this timeframe, will provide overall management and oversight to implement PdM HMS acquisition strategy. Includes Matrix and Contractor support.												
FY 2019 to FY 2020 Increase/Decrease Statement:												

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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / <i>Tactical Network Radio Systems (Low-Tier)</i>	Project (Number/Name) FA1 / <i>Manpack Radio</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
An increase in funding is necessary to support a network-wide evaluation planned for FY 2020.				
Title: HMS Engineering/Technical Support Description: Overall technical analysis support to PdM HMS' Manpack products. FY 2019 Plans: To provide technical support, including systems engineering to evaluate technical alternatives and test support. System Engineering efforts includes: communication architecture analysis, identifying alternatives to reduce costs, improving system performance, and achieve tactical radio objectives. Technical test support includes: planning and execution of laboratory and field test events, support for testing of prototypes, Engineering Design Models (EDMs), commercial radio solutions, Developmental and Operational Test events, and data collection/reduction/analysis of tactical radio performance. FY 2020 Plans: To provide technical support, including systems engineering to evaluate technical alternatives and test support. System Engineering efforts includes: communication architecture analysis, identifying alternatives to reduce costs, improving system performance, and achieving tactical radio objectives. Technical test support includes: planning and execution of laboratory and field test events, support for testing of prototypes, EDMs, commercial radio solutions, Developmental and Operational Test events, and data collection/reduction/analysis of tactical radio performance. FY 2019 to FY 2020 Increase/Decrease Statement: An increase in funding is necessary to support a network-wide evaluation planned for FY 2020.		0.700	0.700	1.000
Title: Test and Evaluation Description: Manpack's Test and Evaluation focuses on the key technical and operational characteristics of the system: Radio Frequency performance, security, Reliability, Availability & Maintainability, suitability and survivability requirements, in addition to operational environmental performance requirements as per the Capability Production Document. All radios awarded a contract were required to go through the Qualification Test (QT) to qualify for a Customer Test (CT). Following CT there will be a Sandbox and Soldier Feedback Study and Field / Lab Based Risk Reduction Test (FBRR/LBRR) that will serve as risk reduction events prior to Operational Test (OT) to ensure the radio is operational at full capability and ready to be used by soldiers. The QT and CT are complete and were executed by Electronic Proving Ground. The QT validated the manufacturers' ability to meet the minimum functional requirements identified in the Performance Requirements Document. All vendors successfully demonstrated key capabilities during QT and proceeded to the CT. The Sandbox, Soldier Feedback Study and FBRR/LBRR will serve as risk reduction events for delayed thresholds and OT. The OT will include support from Army and DoD operational testers and will use communication scenarios based on the Operational Mode		-	0.744	29.072

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Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0605042A / Tactical Network Radio Systems (Low-Tier)				Project (Number/Name) FA1 / Manpack Radio				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2018	FY 2019	FY 2020
Summary / Mission Profile of the system(s) under test. The OT will be designed to validate that HMS products meet warfighter needs in terms of effectiveness, suitability and survivability in an operationally realistic environment. Results from OT will facilitate the delivery orders for Full Rate Production.												
FY 2019 Plans: The FY 2019 funding is needed to conduct testing for the MP candidate products to demonstrate compliance with program requirements; assess effectiveness, suitability, and survivability; to obtain material release for FRP; engineering and technical support at test events; and to fully fund the testing requirements on the MP candidate radios as laid out in the HMS Acquisition Strategy approved May 2014.												
FY 2020 Plans: The FY 2020 funding is needed to conduct testing for the MP candidate products to demonstrate compliance with program requirements; assess effectiveness, suitability, and survivability; to obtain material release for FRP; engineering and technical support at test events; and to fully fund the testing requirements on the MP candidate radios as laid out in the HMS Acquisition Strategy approved May 2014. HMS is planning a network evaluation event in FY 2020 to assess required capabilities, operational efficacy, and interoperability across the communications network. In FY 2020 the Army intends to test and integrate 2-channel communications technologies in support of Air to Ground experimentation.												
FY 2019 to FY 2020 Increase/Decrease Statement: An increase in funding is necessary to support a network-wide evaluation planned for FY 2020. The test will assess the effectiveness of HMS systems within the Army network and support materiel release/acquisition milestone decisions.												
Title: FY 2019 SBIR / STTR Transfer										-	0.063	-
Description: Accounting for FY 2019 SBIR/ STTR Transfer.												
FY 2019 Plans: Accounting for FY 2019 SBIR/ STTR Transfer.												
FY 2019 to FY 2020 Increase/Decrease Statement: FY 2019 Decrease to account for SBIR/ STTR transfer												
Accomplishments/Planned Programs Subtotals										1.248	1.957	30.622
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost	
• FA2: Rifleman Radio (RR)	7.597	1.868	5.032	-	5.032	10.875	11.033	12.290	12.310	0.000	61.005	

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C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2020</u>	<u>FY 2020</u>	<u>FY 2020</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>Complete</u>	<u>Total Cost</u>
• B95004: Handheld Manpack Small Form Fit (HMS)	415.351	298.475	468.026	-	468.026	526.565	609.206	774.369	697.280	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
<p>MP Radio is currently executing a May 2014 approved acquisition strategy to procure Non-Developmental Items (NDI). Utilizing a full and open competition strategy, the MP base contract was awarded to all potential industry partners. The MP contract was awarded on 26 February 2016, and procures NDI MP radios for use in a classified environment. The MP is currently capable of running the following waveforms: SRW, Single Channel Ground and Airborne Radio System (SINCGARS), Satellite Communications (SATCOM) - Army managed waveforms, Mobile User Objective System (MUOS) - Navy managed waveform, and other advanced networking waveforms.</p> <p>The Army has awarded will procure radios through a multiple step selection process:</p> <ol style="list-style-type: none"> Awarded FFP Contracts to all qualified vendors based on technical acceptability and demonstrations (26 February 2016) Awarded initial delivery orders based on Qualification Test results (19 December 2016) Awarded second delivery orders based on Customer Test results (31 July 2017) Awarded LRIP delivery order (30 April 2018) Award LRIP delivery orders based on best value trade-off construct (3QFY19 & 3QFY20) Achieve Full Rate Production (2QFY21) 											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0605042A / <i>Tactical Network Radio Systems (Low-Tier)</i>				Project (Number/Name) FA1 / <i>Manpack Radio</i>					
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Project Management Office Support	Various	PEO C3T, CECOM, PM TR Alliant : Various; APG, MD	0.312	0.548		0.450	Dec 2018	0.550		-		0.550	0.000	1.860	-
FY 2019 SBIR / STTR Transfer	TBD	Various : Various	-	-		0.063		-		-		-	0.000	0.063	-
Subtotal			0.312	0.548		0.513		0.550		-		0.550	0.000	1.923	N/A
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
HMS Engineering/ Technical Support	Various	PEO C3T, ARL, ESP, CECOM, CERDEC, LCMC : Various	1.142	0.700		0.700	Jan 2019	1.000		-		1.000	0.000	3.542	-
Subtotal			1.142	0.700		0.700		1.000		-		1.000	0.000	3.542	N/A
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Follow on Delta Development & Testing	Various	EPG : Ft. Huachuca	2.447	-		-		-		-		-	0.000	2.447	-
Follow on Delta Development & Testing (2)	Various	OTC : TBD	6.446	-		0.744	Nov 2018	29.072		-		29.072	0.000	36.262	-
Subtotal			8.893	-		0.744		29.072		-		29.072	0.000	38.709	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			10.347	1.248		1.957		30.622		-		30.622	0.000	44.174	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army							Date: March 2019			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0605042A / Tactical Network Radio Systems (Low-Tier)			Project (Number/Name) FA1 / Manpack Radio			
	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0605042A / Tactical Network Radio Systems (Low-Tier)		Project (Number/Name) FA1 / Manpack Radio	

Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
MP Sandbox and Soldier Feedback Study	 MP Sandbox Event w/ Soldier Feedback																											
MP Field/Lab Base Risk Reduction Test (FBRR/LBRR)	 MP FBRR / LBRR																											
MP Log Demo					 MP Log Demo																							
MP FBRR 2									 FBRR 2																			
Network Evaluation													 Network Evaluation (OT)															
MP Full Rate Production (FRP)													 MP FRP															

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / <i>Tactical Network Radio Systems (Low-Tier)</i>	Project (Number/Name) FA1 / <i>Manpack Radio</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Manpack (MP) Customer Test (CT)	2	2017	4	2017
MP Sandbox and Soldier Feedback Study	1	2018	2	2018
MP Field/Lab Base Risk Reduction Test (FBRR/LBRR)	3	2018	4	2018
MP Log Demo	1	2019	1	2019
MP FBRR 2	2	2020	2	2020
Network Evaluation	3	2020	4	2020
MP Full Rate Production (FRP)	2	2021	2	2021

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605042A / Tactical Network Radio Systems (Low-Tier)				Project (Number/Name) FA2 / Rifleman Radio (RR)			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
FA2: Rifleman Radio (RR)	-	7.597	1.868	5.032	-	5.032	10.875	11.033	12.290	12.310	0.000	61.005
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Tactical Network Radio Systems (Low-Tier) supports the Army Network Modernization Strategy Line of Effort 1, Unified Network

The HMS radios are a key component of the Integrated Tactical Network which supports a converged Mission Command Network that operates seamlessly worldwide in any environment. These radios will perform under a standards-based network architecture that unifies enterprise and deployed network capabilities. The near-term goal of the HMS radios is to provide 'secure but unclassified' networking capabilities utilizing next generation tactical radios. The cited work is consistent with Strategic Planning Guidance and the Mission Command Network Modernization Implementation Plan.

HMS is structured as a single program of record consisting of several products. The HMS Handheld products encompass the one-channel Rifleman Radio (RR) and two-channel Leader Radio (LR). The RR is a handheld radio that connects soldiers at the lowest echelon of the Army network. It is a National Security Agency certified Type 1 radio used for transmission of up to SECRET information. The RR provides one-channel secure voice and data communications. It is the primary squad level communication system. The LR is a Multiband two-channel handheld radio to be used at the Team, Squad, and Platoon level. The LR will simultaneously support Single Channel Ground and Airborne Radio System (SINCGARS) voice interoperability and other advanced networking waveform communications, in one radio with both handheld and mounted configurations, for fixed and mobile sites.

On 13 September 2016 the Army Acquisition Executive approved a decreased Basis of Issue (BOI) for the single channel RR, an increase to the BOI for the two channel LR and moving forward with acquisition activities for the two channel LR. Single channel RR procurement is being deferred.

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

	FY 2018	FY 2019	FY 2020
Title: Program Management	0.485	0.425	0.475
Description: Handheld's program management includes overall management of program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning and Integrated Product Team meetings.			
FY 2019 Plans: During this timeframe, will provide overall management and oversight to implement HMS acquisition strategy. Includes Matrix and Contractor support.			
FY 2020 Plans:			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
During this timeframe, will provide overall management and oversight to implement HMS acquisition strategy. Includes Matrix and Contractor support.				
FY 2019 to FY 2020 Increase/Decrease Statement: An increase in funding is necessary to support a network-wide evaluation planned for FY 2020.				
Title: HMS Engineering/Technical Support Description: Overall technical analysis support to PdM HMS' Handheld products. FY 2019 Plans: Provide technical systems engineering support to evaluate technical alternatives and perform communication architecture analysis to identify alternatives to reduce cost, improve performance, and achieve tactical radio objectives. Technical test support for the planning and execution of laboratory and field test events, including support for testing of prototypes, Engineering Design Models (EDMs), commercial radio solutions, Developmental and Operational Test events, and data collection/reduction/analysis of tactical radio performance. FY 2020 Plans: Provide technical systems engineering support to evaluate technical alternatives and perform communication architecture analysis to identify alternatives to reduce cost, improve performance, and achieving tactical radio objectives. Technical test support for the planning and execution of laboratory and field test events, including support for testing of prototypes, EDMs, commercial radio solutions, Developmental and Operational Test events, and data collection/reduction/analysis of tactical radio performance. FY 2019 to FY 2020 Increase/Decrease Statement: An increase in funding is necessary to support a network-wide evaluation planned for FY 2020.		0.300	0.300	0.400
Title: Test and Evaluation Description: Handheld's Test and Evaluation focuses on the evaluation of key technical and operational characteristics of the system: Radio Frequency performance, security, Reliability, Availability & Maintainability, and survivability requirements, in addition to operational environmental performance requirements as per the Capability Production Document. All radios awarded a contract will be required to go through the Qualification Test (QT) to qualify for Field / Lab Based Risk Reduction (FBRR/LBRR) that will serve as risk reduction events prior to Operational Test (OT) to ensure the radio is operational at full capability and ready to be used by soldiers. The QT will validate the manufacturers' ability to meet the minimum functional requirements identified in the Performance Requirements Document. Radios that successfully demonstrate key capabilities during QT will proceed to FBRR/LBRR. The OT will include support from Army and DoD operational testers and will use communication scenarios based on the Operational Mode		6.812	1.083	4.157

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B. Accomplishments/Planned Programs (\$ in Millions)									FY 2018	FY 2019	FY 2020
Summary / Mission Profile of the system(s) under test. The OT will be designed to validate that the HMS products meet warfighter needs in terms of effectiveness, suitability and survivability in an operationally realistic environment. Results from the OT will facilitate the delivery orders for Full Rate Production.											
FY 2019 Plans: The FY 2019 funding is needed to conduct testing for the LR candidate products to demonstrate compliance with program requirements; assess effectiveness, suitability, and survivability; to obtain material release for FRP; and to fund the testing requirements on the LR candidate radios as laid out in the HMS Acquisition Strategy addendum approved in March 2017.											
FY 2020 Plans: The FY 2020 funding is needed to conduct testing for the LR candidate products to demonstrate compliance with program requirements; assess effectiveness, suitability, and survivability; to obtain material release for FRP; and to fund the testing requirements on the LR candidate radios as laid out in the HMS Acquisition Strategy addendum approved in March 2017. In FY 2020 the Army intends to test and integrate 2-channel communications technologies in support of Air to Ground experimentation.											
FY 2019 to FY 2020 Increase/Decrease Statement: An increase in funding is necessary to support a network-wide evaluation planned for FY 2020. The test will assess the effectiveness of HMS systems within the Army network and support materiel release/acquisition milestone decisions.											
Title: FY 2019 SBIR/ STTR Transfer									-	0.060	-
Description: Accounting for FY 2019 SBIR/ STTR Transfer.											
FY 2019 Plans: Accounting for FY 2019 SBIR/ STTR Transfer.											
FY 2019 to FY 2020 Increase/Decrease Statement: FY 2019 Decrease to account for SBIR/ STTR transfer.											
Accomplishments/Planned Programs Subtotals									7.597	1.868	5.032
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• FA1: Manpack Radio	1.248	1.957	30.622	-	30.622	39.422	36.335	13.945	15.300	0.000	138.829
• B95004: Handheld Manpack Small Form Fit (HMS)	415.351	298.475	468.026	-	468.026	526.565	609.206	774.369	697.280	Continuing	Continuing

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C. Other Program Funding Summary (\$ in Millions)											
	<u>Line Item</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u> <u>Base</u>	<u>FY 2020</u> <u>OCO</u>	<u>FY 2020</u> <u>Total</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>Cost To</u> <u>Complete</u> <u>Total Cost</u>
Remarks											
D. Acquisition Strategy											
On 13 September 2016 the Army Acquisition Executive determined to decrease the Basis of Issue (BOI) for the single channel RR, increase the BOI for the two channel LR and move forward with acquisition activities for the two channel LR. Single channel RR procurement is being deferred. An acquisition strategy addendum adding LR was approved in March 2017. The addendum continues the multi-vendor approach utilizing the existing Indefinite Delivery Indefinite Quantity (IDIQ) RR base contract (awarded 29 April 2015) to on-ramp LR capabilities (18 September 2018). The LR effort is a separate competition under the Handheld radio suite.											
The LR will simultaneously run Single Channel Ground and Airborne Radio System (SINCGARS) and other advanced networking waveforms, in one radio with both handheld and mounted configurations, for fixed and mobile sites.											
The Army will procure radios through a multiple step selection process:											
a. Awarded FFP Contracts to all qualified vendors based on technical acceptability and demonstrations (18 September 2018)											
b. Awarded LRIP delivery orders to support SFAB and ITN fieldings/evaluations (18 September 2018)											
c. Award LRIP delivery orders based on results the best value trade-off construct (3QFY19 & 3QFY20)											
E. Performance Metrics											
N/A											

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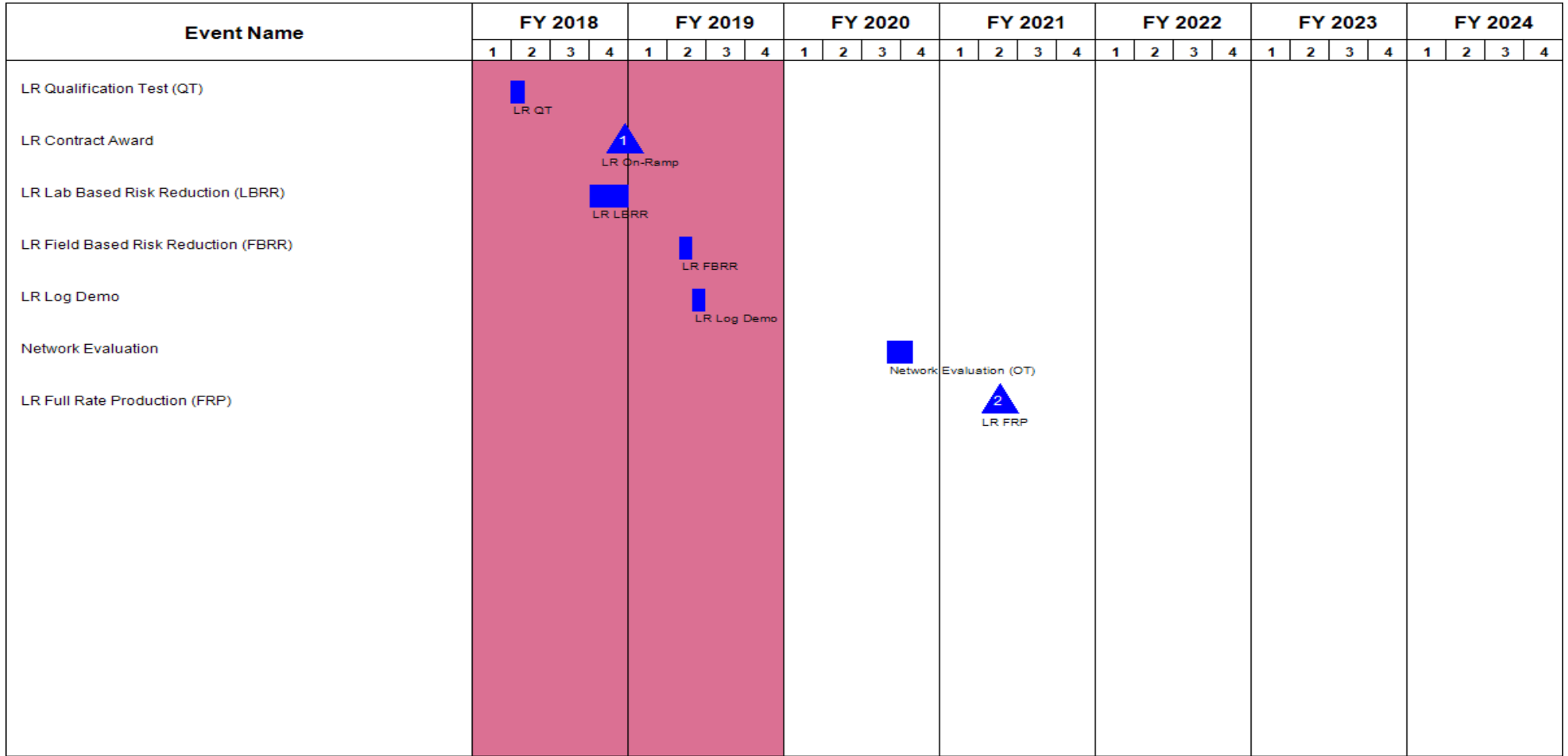
Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0605042A / Tactical Network Radio Systems (Low-Tier)				Project (Number/Name) FA2 / Rifleman Radio (RR)					
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Project Management Office Support	Various	PEO C3T, CECOM, PM TR Alliant : Various; APG, MD	0.373	0.485		0.425	Dec 2018	0.475		-		0.475	0.000	1.758	-
FY 2019 SBIR/ STTR Transfer	TBD	Various : Various	-	-		0.060		-		-		-	0.000	0.060	-
Subtotal			0.373	0.485		0.485		0.475		-		0.475	0.000	1.818	N/A
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
HMS Engineering/ Technical Support	Various	PEO C3T, ARL, ESP, CECOM, CERDEC, LCMC : Various	0.154	0.300		0.300	Jan 2019	0.400		-		0.400	0.000	1.154	-
Subtotal			0.154	0.300		0.300		0.400		-		0.400	0.000	1.154	N/A
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Follow on Delta Development & Testing	Various	EPG : Fort Huachuca	2.676	2.100		-		-		-		-	0.000	4.776	-
Follow on Delta Development & Testing (2)	Various	OTC : TBD	0.648	4.712		1.083	Nov 2018	4.157		-		4.157	0.000	10.600	-
Subtotal			3.324	6.812		1.083		4.157		-		4.157	0.000	15.376	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3.851	7.597		1.868		5.032		-		5.032	0.000	18.348	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army							Date: March 2019			
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0605042A / Tactical Network Radio Systems (Low-Tier)			Project (Number/Name) FA2 / Rifleman Radio (RR)				
	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0605042A / Tactical Network Radio Systems (Low-Tier)		Project (Number/Name) FA2 / Rifleman Radio (RR)	



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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / <i>Tactical Network Radio Systems (Low-Tier)</i>	Project (Number/Name) FA2 / <i>Rifleman Radio (RR)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
LR Qualification Test (QT)	1	2018	2	2018
LR Contract Award	4	2018	4	2018
LR Lab Based Risk Reduction (LBRR)	4	2018	4	2018
LR Field Based Risk Reduction (FBRR)	2	2019	2	2019
LR Log Demo	2	2019	2	2019
Network Evaluation	3	2020	4	2020
LR Full Rate Production (FRP)	2	2021	2	2021