

**UNCLASSIFIED**

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 0303367A / Spectrum Access Research and Development							
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	-	66.125	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	66.125
FH7: Spectrum Usage Measurement System (SUMS)	-	7.200	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.200
FH8: DSA Rule Development and Validation	-	5.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000
FH9: Flightline Radio network with Seamless Handoff	-	5.800	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.800
FI1: Space-Time Coding - Aeronautical Mobile Telemetry	-	2.300	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.300
XR4: Military Full Duplex Communication (MFD-COMM)	-	10.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.000
XR5: SRW NB Relocation to VHF-UHF (DIST C)	-	1.022	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.022
XR6: Enhancing Coexistence for Army Force Protection	-	0.651	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.651
XR7: Conformal C-Band/ Multiband Antennas	-	0.982	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.982
XR9: Cellular-Based Range Telemetry (CRTM)	-	6.647	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.647
XS2: NexGen Spectrum Situational Awareness System FOUO	-	3.823	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.823
XS3: SLATE ATD Spectrum Cohabitation Demo	-	17.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.700
XS4: Training Spectrum Cohabitation Demonstration	-	5.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000

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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0303367A / Spectrum Access Research and Development				
A. Mission Description and Budget Item Justification						
In accordance with 47 USC 928 and the Commercial Spectrum Enhancement Act (CSEA) Title II, P.L.108-494, dated December 23, 2004, established the Spectrum Relocation Fund (SRF) to provide Federal agencies a mechanism to recover the costs associated with relocating communication systems from spectrum bands which were auctioned for commercial purposes. The SRF is funded with proceeds from FCC conducted auctions of spectrum licenses. SRF funds have an indefinite obligation period and remain available until expended (X Year). The DoD Chief Information Officer (CIO) executes oversight of DoD spectrum relocation and sharing efforts.						
B. Program Change Summary (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget		0.000	0.000	0.000	-	0.000
Current President's Budget		66.125	0.000	0.000	-	0.000
Total Adjustments		66.125	0.000	0.000	-	0.000
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-	-			
• Spectrum Funding		66.125	-	-	-	-

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) FH7 / <i>Spectrum Usage Measurement System (SUMS)</i>			
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
FH7: <i>Spectrum Usage Measurement System (SUMS)</i>	-	7.200	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.200
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

In accordance with 47 USC 928 and the Commercial Spectrum Enhancement Act (CSEA) Title II, P.L.108-494, dated December 23, 2004, established the Spectrum Relocation Fund (SRF) to provide Federal agencies a mechanism to recover the costs associated with relocating communication systems from spectrum bands which were auctioned for commercial purposes. The SRF is funded with proceeds from FCC conducted auctions of spectrum licenses. SRF funds have an indefinite obligation period and remain available until expended (X Year). The DoD Chief Information Officer (CIO) executes oversight of DoD spectrum relocation and sharing efforts.

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) FH8 / <i>DSA Rule Development and Validation</i>			
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
FH8: <i>DSA Rule Development and Validation</i>	-	5.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

In accordance with 47 USC 928 and the Commercial Spectrum Enhancement Act (CSEA) Title II, P.L.108-494, dated December 23, 2004, established the Spectrum Relocation Fund (SRF) to provide Federal agencies a mechanism to recover the costs associated with relocating communication systems from spectrum bands which were auctioned for commercial purposes. The SRF is funded with proceeds from FCC conducted auctions of spectrum licenses. SRF funds have an indefinite obligation period and remain available until expended (X Year). The DoD Chief Information Officer (CIO) executes oversight of DoD spectrum relocation and sharing efforts.

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) FH9 / <i>Flightline Radio network with Seamless Handoff</i>			
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
FH9: <i>Flightline Radio network with Seamless Handoff</i>	-	5.800	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.800
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

In accordance with 47 USC 928 and the Commercial Spectrum Enhancement Act (CSEA) Title II, P.L.108-494, dated December 23, 2004, established the Spectrum Relocation Fund (SRF) to provide Federal agencies a mechanism to recover the costs associated with relocating communication systems from spectrum bands which were auctioned for commercial purposes. The SRF is funded with proceeds from FCC conducted auctions of spectrum licenses. SRF funds have an indefinite obligation period and remain available until expended (X Year). The DoD Chief Information Officer (CIO) executes oversight of DoD spectrum relocation and sharing efforts.

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) F11 / <i>Space-Time Coding - Aeronautical Mobile Telemetry</i>			
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
F11: <i>Space-Time Coding - Aeronautical Mobile Telemetry</i>	-	2.300	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.300
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / Spectrum Access Research and Development				Project (Number/Name) XR4 / Military Full Duplex Communication (MFD-COMM)			
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
XR4: Military Full Duplex Communication (MFD-COMM)	-	10.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) XR5 / <i>SRW NB Relocation to VHF-UHF (DIST C)</i>			
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
XR5: <i>SRW NB Relocation to VHF-UHF (DIST C)</i>	-	1.022	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.022
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) XR6 / <i>Enhancing Coexistence for Army Force Protection</i>			
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
XR6: <i>Enhancing Coexistence for Army Force Protection</i>	-	0.651	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.651
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) XR7 / <i>Conformal C-Band/Multiband Antennas</i>			
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
XR7: <i>Conformal C-Band/Multiband Antennas</i>	-	0.982	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.982
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) XR9 / <i>Cellular-Based Range Telemetry (CRTM)</i>			
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
XR9: <i>Cellular-Based Range Telemetry (CRTM)</i>	-	6.647	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.647
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) XS2 / <i>NexGen Spectrum Situational Awareness System FOUO</i>			
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
XS2: <i>NexGen Spectrum Situational Awareness System FOUO</i>	-	3.823	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.823
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) XS3 / <i>SLATE ATD Spectrum Cohabitation Demo</i>			
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
XS3: <i>SLATE ATD Spectrum Cohabitation Demo</i>	-	17.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.700
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0303367A / <i>Spectrum Access Research and Development</i>				Project (Number/Name) <i>XS4 / Training Spectrum Cohabitation Demonstration</i>			
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
<i>XS4: Training Spectrum Cohabitation Demonstration</i>	-	5.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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