Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army											Date: February 2020	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603766A *I Tactical Electronic Surveillance System - Adv Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	-	35.667	37.490	194.775	-	194.775	105.297	82.506	72.221	42.440	Continuing	Continuing
907: *Tactical Exploitation Of National Capabilities-MIP*	-	35.667	37.490	194.775	-	194.775	105.297	82.506	72.221	42.440	Continuing	Continuing

Note

All funding is in support of the ACTIVE COMPONENT

A. Mission Description and Budget Item Justification

The Tactical Exploitation of National Capabilities (TENCAP) program serves as the Army's centralized lead to perform National Intelligence cross-agency engineering to evaluate, enhance, prototype, and transition Intelligence, Surveillance, and Reconnaissance (ISR) technologies/capabilities developed by Science and Technology (S&T) and other activities across the National Intelligence Community (IC) into Army systems and architectures. TENCAP: (1) ensures continued access to current National and Theater sensors and supporting tactical architectures; and (2) exploits new developments that focus on improving the Analysis and Tasking, Collection, Processing, Exploitation, Dissemination and Feedback (TCPEDF) of intelligence data. This includes efforts to: (1) shorten targeting timelines down to the Platoon level; (2) enhance target identification; (3) provide better target location (accuracy); (4) provide continued coverage of a target; and (5) develop in-theater analytic tools to enable data exploitation in near real-time support to contingency operations.

Tactical Intelligence Targeting Access Node (TITAN) Space prototype system will provide timely assured intelligence for long range precision fires and maneuver in connected and A2AD environments; Assured access to Space ISR: National, Army and Commercial; Software Analytics capability to enable the intelligence cycle with increased speed, precision and accuracy Automated/Assisted Sensor-to-Shooter workflows: speed, scalability, accuracy to support LRPF in an A2AD environment; Modern and consolidated ground station for space and select aerial sensors. TITAN is pending the creation of its own project line 643766.BX9 in FY 2022, once the strategy and validation of the requirement can be finalized within HQDA.

The Multi Domain Sensor System (MDSS) will provide multiple sensing capabilities by developing and prototyping survivable sensor capabilities on higher altitude platforms that can perform effective stand-off operations. MDSS will exploit and disrupt enemy Radio Frequency (RF) capabilities and systems. They include Electronic Intelligence (ELINT), Communications Intelligence (COMINT), Synthetic Aperture Radar (SAR), Moving Target Indicator (MTI), Cyber/EW, Air-Launched Effects (ALE) and Aircraft Survivability sensors. These will allow stand-off operations to detect, locate, identify and track critical targets for the ground commander. Developing and demonstrating this sensing capabilities on higher altitude platforms is the first step toward gaining advantage against threats posed by adversarial anti-access and area-denial efforts in the competition phase of operations.

The Low Earth Orbit (LEO) strategy will provide prototyping, development and experimentation of the Tactical Space Layer (TSL) sensors (electro optical, synthetic aperture radar, and radio frequency) which are designed to provide wide-area, responsive deep area sensing required for beyond line of sight (BLOS) targeting and force maneuver, significantly reducing Sensor to Shooter (S2S) timelines. Follow-on persistent prototype tactical sensor capabilities will be integrated with the Army

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army	Date: February 2020
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603766A *I Tactical Electronic Surveillance System - Adv Dev*

Tactical Intelligence Targeting Access Node (TITAN) ground station which will provide direct tasking and assured access directly supporting live-fire S2S demonstrations and assessments. The Low Earth Orbit (LEO) realignment from Program Element (PE) 1206308A Project FE5 to PE 0603766A Project 907 occurs in FY 2022.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	35.667	34.890	26.257	-	26.257
Current President's Budget	35.667	37.490	194.775	-	194.775
Total Adjustments	0.000	2.600	168.518	-	168.518
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-7.400			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	168.518	-	168.518

Change Summary Explanation

The addition of $52M in FY21 was due to the Multi-Domain Sensing System (MDSS) new start

The addition of $86.6M in FY21 was due to the Low Earth Orbit (LEO) realignment from Program Element (PE) 1206308A Project FE5 to PE 0603766A Project 907

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	Project (Number/Name) 907 / *Tactical Exploitation Of National Capabilities-MIP*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
907: *Tactical Exploitation Of National Capabilities-MIP*	-	35.667	37.490	194.775	-	194.775	105.297	82.506	72.221	42.440	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

All funding is in support of the ACTIVE COMPONENT.

A. Mission Description and Budget Item Justification

The Tactical Exploitation of National Capabilities (TENCAP) office serves as the Army's centralized lead to perform National Intelligence cross-agency engineering to evaluate, enhance, prototype, and transition Intelligence, Surveillance and Reconnaissance (ISR) technologies/capabilities developed by Science and Technology (S&T) and other activities across the National Intelligence Community (IC) into Army systems and architectures. TENCAP: (1) ensures continued access to current National and Theater sensors and supporting tactical architectures; and (2) exploits and influences new developments that focus on improving the Analysis and Tasking, Collection, Processing, Exploitation, Dissemination and Feedback (TCPEDF) of intelligence data. This includes efforts to: (1) shorten targeting timelines down to the Platoon level; (2) enhance target identification; (3) provide better target location (accuracy); (4) provide continued coverage of a target; and (5) develop in-theater analytic tools to enable data exploitation in near real-time support to contingency operations.

FY 2021 Base funding in the amount of $55.975 million provides: (1) Per direction of the Army ISR Task Force and Future Command, initial risk reduction, analytics and engineering development of the prototype for Tactical Intelligence Targeting Access Node (TITAN) space system; (2) Advanced Miniaturized Data Acquisition System (AMDAS) 'Next' system development; AMDAS Dissemination Vehicle (ADV) improvements; Remote Ground Terminal (RGT) development in order to support TITAN Space risk reduction, analytics and prototyping efforts; (3) engineering and collaborative development on multiple validated National Intelligence Community (IC) advanced software and prototype developments that leverage National IC investments for Army use and ensure continuous Army interoperability with National IC assets and architectures; (4) advanced development of capabilities for Air Vigilance (AV) Army Program of Record; and (5) development of TENCAP Radio Frequency Exploitation (TRFE) effort to support future synchronization of SIGINT, Cyber and Electronic Warfare operations.

Multi-Domain Sensing System (MDSS) - FY 2021 base dollars in the amount of $52 million supports MDSS development and prototyping. The Multi Domain Sensor System (MDSS) will provide multiple sensing capabilities by developing and prototyping survivable sensor capabilities on higher altitude platforms that can perform effective stand-off operations. MDSS will exploit and disrupt enemy Radio Frequency (RF) capabilities and systems. They include Electronic Intelligence (ELINT), Communications Intelligence (COMINT), Synthetic Aperture Radar (SAR), Moving Target Indicator (MTI), Cyber/EW, Air-Launched Effects (ALE) and Aircraft Survivability sensors. These will allow stand-off operations to detect, locate, identify and track critical targets for the ground commander. Developing and demonstrating this sensing capabilities on higher altitude platforms is the first step toward gaining advantage against threats posed by adversarial anti-access and area-denial efforts in the competition phase of operations.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*

The Low Earth Orbit (LEO) FY 2021 base dollars in the amount of $86.80 million dollars supports the prototyping, development, and experimentation of Tactical Space Layer (TSL) sensors (electro optical, synthetic aperture radar, and radio frequency) designed to provide wide-area, responsive deep area sensing required for beyond line of sight (BLOS) targeting and force maneuver, significantly reducing Sensor to Shooter (S2S) timelines. Follow-on persistent prototype tactical sensor capabilities will be integrated with the Army Tactical Intelligence Targeting Access Node (TITAN) ground station which will provide direct tasking and assured access directly supporting live-fire S2S demonstrations and assessments. This is not a new start project. LEO ISR project transitions from Program Element (PE) 1206308A Project FE5 to PE 0603766A Project 907

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: TENCAP Cross-agency Core Engineering activities ***Description:*** By utilizing organic and matrix engineering subject matter experts, TENCAP collaborates, develops and exploits emerging multi-intelligence based technologies to satisfy/accelerate Army Intelligence, Surveillance, Reconnaissance (ISR), Mission Command and Force Protection requirements. ***FY 2020 Plans:*** Will work to incorporate Army requirements into earliest stages of National developments; Ensure Army access to sensors and multi-intelligence based capabilities; Monitor emerging technologies and systems; Exploit advances in commercial imagery and signal technologies; Develop prototypes that improve Army intelligence products. ***FY 2021 Plans:*** Will work to incorporate Army requirements into earliest stages of National developments; Ensure Army access to sensors and multi-intelligence based capabilities; Monitor emerging technologies and systems; Exploit advances in commercial imagery and signal technologies; Develop prototypes that improve Army intelligence products. Approximately 50% of the core TENCAP resources will be in the development and integration of TITAN Space prototype. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funds align to TENCAP engineering and management efforts that includes initial studies and designs, and progresses to prototype development and testing.	10.634	14.605	10.845
Title: Air Vigilance - Advanced Development ***Description:*** Enhance intelligence, force protection, and indications and warning capabilities under Army TENCAP program. ***FY 2020 Plans:*** Will continue to develop advanced signal and software enhancements for Air Vigilance (AV) Army Program of Record that support the programs Capability Drops. ***FY 2021 Plans:***	5.163	5.479	4.034

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Will continue to develop advanced signal and software enhancements for Air Vigilance (AV) Army Program of Record that support the programs Capability Drops. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funds align to software changes required by capability drop requirements and newly identified and/or evolving threats.			
Title: Advanced Miniaturized Data Acquisition System(AMDAS)/ AMDAS Dissemination Vehicle (ADV) ***Description:*** Continue advanced engineering and development efforts to ensure continued interoperability and effectiveness of Army Corp-level TENCAP subsystems that provide national data to the tactical warfighter via intelligence community partners classified national systems. Will become subsystem to TITAN Space prototype. ***FY 2020 Plans:*** AMDAS Next: Will continue the development of TENCAP new prototype subsystem antenna, which will include modeling and simulation along with early developmental testing. Continued work on advance sensor development, and design ground processor, to ensure alignment with evolving national architectural enhancements as the National Technical Means (NTM) capabilities progress. ***FY 2021 Plans:*** AMDAS Next: Will continue the development of TENCAP new prototype subsystem antenna, which will include modeling and simulation along with early developmental testing. Continued work on advance sensor development, and design ground processor, to ensure alignment with evolving national architectural enhancements as the National Technical Means (NTM) capabilities progress. Will become subsystem to TITAN Space prototype. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funds align with progression of engineering efforts from requirement refinement, studies and initial design development, into system sub-element prototype development and initial developmental testing.	14.760	14.559	8.918
Title: TENCAP Radio Frequency Exploitation (TRFE) ***Description:*** Prototype capability software that informs, influences and enhances MULTI-INT sensor systems within PEO IEW&S such as Terrestrial Layer System (TLS) by targeting modern digital communications systems employed by near-peer nation state armies. Assists with Battlespace RF Characterization for modern communication environments with the intent to synchronize SIGINT, Cyber and Electronic Warfare operations. Utilizes commercial industry components and architectures to minimize hardware costs, risk and maximizes scalability/modularity. ***FY 2020 Plans:***	5.092	2.847	2.178

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Continue to develop the MULTI-INT TRFE cognitive software based SIGINT-Enabled Electronic Warfare and Cyber Attack prototype capability focused on countering Peer State and modern communication targets and threats. ***FY 2021 Plans:*** Continue to develop the MULTI-INT TRFE cognitive software based SIGINT-Enabled Electronic Warfare and Cyber Attack prototype capability focused on countering Peer State and modern communication targets and threats. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funds decrease align with the advanced development and prototyping efforts.			
Title: Tactical Intelligence Targeting Access Node (TITAN) Space Prototype System ***Description:*** Tactical Intelligence Targeting Access Node (TITAN) Space prototype system will provide timely assured intelligence for long range precision fires and maneuver in connected and A2AD environments; Assured access to Space ISR: National, Army and Commercial; Software Analytics capability to enable the intelligence cycle with increased speed, precision and accuracy Automated/Assisted Sensor-to-Shooter workflows: speed, scalability, accuracy to support LRPF in an A2AD environment; Modern and consolidated ground station for space and select aerial sensors TITAN is pending the creation of its own project line 643766BX9 in FY 2022 once the strategy and validation of the requirement can be finalized within HQDA. ***FY 2021 Plans:*** Continue the development and integration of the TITAN space prototype system that will provide rapid availability of National Overhead Systems (NOS) GEOINT and SIGINT capability. Continue to develop and integrate with the Remote Ground Terminal (RGT) and LEO constellation, the downlink, ingest and processing of commercial imagery. Continue the development and integration of automated target recognition along with integrating the fires architecture to support Army's #1 priority, Long Range Precision Fires (LRPF). ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2021 increase supports advanced development and prototyping efforts.	-	-	30.000
Title: Multi-Domain Sensing System (MDSS) ***Description:*** The Multi Domain Sensor System (MDSS) will provide multiple sensing capabilities by developing and prototyping survivable sensor capabilities on higher altitude platforms that can perform effective stand-off operations. They include Electronic Intelligence (ELINT), Communications Intelligence (COMINT), Synthetic Aperture Radar (SAR), Moving Target Indicator (MTI), Cyber/EW, Air-Launched Effects (ALE) and Aircraft Survivability sensors.	-	-	52.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
MDSS is pending the creation of its own project line in FY 2022 once the strategy and validation of the requirement can be finalized within HQDA. ***FY 2021 Plans:*** Funding supports MDSS prototype efforts ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2021 increase supports new MDSS prototype effort			
Title: Low Earth Orbit Satellite Capability ***Description:*** The Low Earth Orbit (LEO) effort will support the prototyping, development, and experimentation of Tactical Space Layer (TSL) sensors (electro optical, synthetic aperture radar, and radio frequency) designed to provide wide-area, responsive deep area sensing required for beyond line of sight (BLOS) targeting and force maneuver, significantly reducing Sensor to Shooter (S2S) timelines. ***FY 2021 Plans:*** Provides for follow-on persistent prototype, development, and experimentation of tactical sensor capabilities which will be integrated with the Army Tactical Intelligence Targeting Access Node (TITAN) ground station which will provide direct tasking and assured access directly supporting live-fire S2S demonstrations and assessments. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding increase supports the Low Earth Orbit Satellite prototype effort	-	-	86.800
Title: FY 2018 NDAA SEC 825 MDAP Cost Overrun ***Description:*** FY 2018 NDAA SEC 825 MDAP Cost Overrun	0.018	-	-
Accomplishments/Planned Programs Subtotals	35.667	37.490	194.775

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• 0605766A: *National Capabilities Integration (MIP)*	12.340	7.835	7.670	-	7.670	11.671	11.044	11.289	13.600	0.000	75.449
• OMA - 122011: *Contractor Logistics Support and Other Weapon Support*	2.052	-	2.132	-	2.132	2.175	2.217	2.285	2.330	0.000	13.191

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

The Army Tactical Exploitation of National Capabilities (TENCAP) mission is a Congressionally-mandated and chartered enduring requirement to leverage National Intelligence capabilities useful to the tactical Army. The Army TENCAP acquisition strategy is driven by an annual TENCAP General Officer Steering Group (TGOSG), co-chaired by the Army G2, Army G8, Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology [ASA(ALT)], and includes representatives from the Army G3, Army G6, Army Training and Doctrine Command (TRADOC), and the Program Executive Office for Intelligence, Electronic Warfare and Sensors (PEO IEW&S). The TGOSG reviews, validates, prioritizes, and guides Army TENCAP efforts, according to Army and Defense strategy. Based on the TGOSG guidance, Army TENCAP invests BA 6.4 RDTE in Intelligence Community (IC) developments during the more cost-effective advanced development phase to ensure Army requirements are met with minimal redundancy to Army investments. Army TENCAP then uses BA 6.5 RDTE to manage the transition of these advanced development efforts through system development and integration into Army Programs of Record (POR). This strategy ensures these leveraged investments remain viable through multiple budget cycles, significantly increasing successful transition to recipient Army PORs. With acquisition discipline and oversight provided by PEO IEW&S, Army TENCAP executes the TGOSG approved efforts through use of multiple contracts and agreements with the military, National Intelligence agencies, labs, industry partners and academia for the full duration required to complete development and transition these national capabilities into enduring Army programs.

Tactical Intelligence Targeting Access Node (TITAN) Space prototype system will provide timely assured intelligence for long range precision fires and maneuver in connected and A2AD environments; Assured access to Space ISR: National, Army and Commercial; Software Analytics capability to enable the intelligence cycle with increased speed, precision and accuracy Automated/Assisted Sensor-to-Shooter workflows: speed, scalability, accuracy to support LRPF in an A2AD environment; Modern and consolidated ground station for space and select aerial sensors TITAN is pending the creation of its own project line 643766BX9 in FY 2022 once the strategy and validation of the requirement can be finalized within HQDA.

Multi-Domain Sensing System (MDSS) - FY 2021 base dollars in the amount of $52 million supports MDSS development. The Multi Domain Sensor System (MDSS) will provide multiple sensing capabilities by developing and prototyping survivable sensor capabilities on higher altitude platforms that can perform effective stand-off operations. MDSS will exploit and disrupt enemy Radio Frequency (RF) capabilities and systems. They include Electronic Intelligence (ELINT), Communications Intelligence (COMINT), Synthetic Aperture Radar (SAR), Moving Target Indicator (MTI), Cyber/EW, Air-Launched Effects (ALE) and Aircraft Survivability sensors. These will allow stand-off operations to detect, locate, identify and track critical targets for the ground commander. Developing and demonstrating this sensing capabilities on higher altitude platforms is the first step toward gaining advantage against threats posed by adversarial anti-access and area-denial efforts in the competition phase of operations.

The Low Earth Orbit (LEO) FY 2021 base dollars in the amount of $86.80 million dollars supports the prototyping, development, and experimentation of Tactical Space Layer (TSL) sensors (electro optical, synthetic aperture radar, and radio frequency) designed to provide wide-area, responsive deep area sensing required for beyond line of sight (BLOS) targeting and force maneuver, significantly reducing Sensor to Shooter (S2S) timelines. On-going Army S&T, Joint Capability Technology

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*

Demonstrations, National and industry prototype efforts will continue experimentation in FY21. Follow-on persistent prototype tactical sensor capabilities will be integrated with the Army Tactical Intelligence Targeting Access Node (TITAN) ground station which will provide direct tasking and assured access directly supporting live-fire S2S demonstrations and assessments.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TENCAP Intelligence Engineers (SETA)	C/FPAF	Perspecta : Alexandria, VA	22.731	3.015	Jan 2019	3.100	Jan 2020	1.500	Jan 2021	-		1.500	0.000	30.346	Continuing
TENCAP Intelligence Engineers(Matrix Gov)	MIPR	Army Geospatial Cener (AGC) : Alexandria, VA	7.257	1.300	Jan 2019	2.300	Jan 2020	1.200	Jan 2021	-		1.200	0.000	12.057	Continuing
TENCAP Intelligence Engineers (SETA) for TITAN Space prototype development	C/TBD	TBD : TBD	-	-		-		1.307	Jan 2021	-		1.307	0.000	1.307	Continuing
TENCAP Intelligence Engineers (Matrix Gov) for TITAN Space prototype development	MIPR	Army Geospatial Center (AGC) : Alexandria, VA	-	-		-		0.900	Jan 2021	-		0.900	0.000	0.900	-
SETA Support MDSS	TBD	PM SAI : Aberdeen, MD	-	-		-		2.000	Nov 2020	-		2.000	0.000	2.000	-
SETA Support LEO	TBD	A-PNT / TENCAP : Multiple locations	-	-		-		5.000	Jan 2021	-		5.000	0.000	5.000	-
FY 2018 NDAA SEC 825 MDAP Cost Overrun	TBD	TENCAP : Alexandria	-	0.018		-		-		-		-	0.000	0.018	-
		Subtotal	29.988	4.333		5.400		11.907		-		11.907	0.000	51.628	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TENCAP Core (Focus) Areas	Various	Multiple : Multiple	18.491	3.161	Feb 2019	5.980	Feb 2020	5.920	Feb 2021	-		5.920	0.000	33.552	Continuing
Air Vigilance	MIPR	Classified : MIPR	9.575	5.163	Jan 2019	5.479	Jan 2020	4.034	Jan 2021	-		4.034	0.000	24.251	Continuing
AMDAS/ADV (capability transitions to TITAN Space prototype)	MIPR	Classified : MIPR	17.690	14.760	Jan 2019	12.959	Jan 2020	8.918	Jan 2021	-		8.918	0.000	54.327	Continuing
TRFE	MIPR	Classified : MIPR	-	5.121	Jan 2019	2.847	Jan 2020	2.178	Jan 2021	-		2.178	0.000	10.146	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TITAN Space prototype development	C/TBD	Classified : TBD	-	-		-		24.102	Jan 2021	-		24.102	0.000	24.102	Continuing
MDSS Sensor Improvements (LRR)	TBD	TBD : TBD	-	-		-		12.000	Nov 2020	-		12.000	0.000	12.000	-
MDSS Flyoff Contracts	TBD	TBD : TBD	-	-		-		9.000	Feb 2021	-		9.000	0.000	9.000	-
MDSS Sensor Development Contract	TBD	TBD : TBD	-	-		-		24.750	Jul 2021	-		24.750	0.000	24.750	-
LEO Contracts	TBD	A-PNT / TENCAP : Multiple Locations	-	-		-		70.400	Jan 2021	-		70.400	0.000	70.400	-
		Subtotal	45.756	28.205		27.265		161.302		-		161.302	0.000	262.528	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TENCAP Prgm Mgmt-Dir Gov,travel,etc.	Allot	Army TENCAP : Alexandria, VA	13.731	2.258	Jan 2019	3.900	Jan 2020	2.311	Jan 2021	-		2.311	0.000	22.200	Continuing
TENCAP Secured Facilities	MIPR	Army Geospatial Center (AGC) : Alexandria, VA	3.102	0.475	Jan 2019	0.500	Jan 2020	0.525	Jan 2021	-		0.525	0.000	4.602	Continuing
TENCAP Prgm Mgmt - TITAN Space prototype development	Allot	Army TENCAP : Alexandria, VA	-	-		-		1.800	Jan 2021	-		1.800	0.000	1.800	Continuing
Prog Mgmt- MDSS	TBD	PM SAI : Aberdeen, MD	-	-		-		2.500	Nov 2020	-		2.500	0.000	2.500	-
LEO Prog Mgmt	TBD	A-PNT / TENCAP : Multple Locations	-	-		-		3.400	Oct 2020	-		3.400	0.000	3.400	-
		Subtotal	16.833	2.733		4.400		10.536		-		10.536	0.000	34.502	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	Project (Number/Name) 907 / *Tactical Exploitation Of National Capabilities-MIP*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TENCAP Lab Tests, Exercises, Simulations	MIPR	Multiple : Multiple	1.810	0.396	Jan 2019	0.425	Jan 2020	0.400	Jan 2021	-		0.400	0.000	3.031	Continuing
Test and Exercises - TITAN Space prototype development	TBD	Multiple : Multiple	-	-		-		0.880	Jan 2021	-		0.880	0.000	0.880	-
Flyoff Test Support	TBD	TBD : TBD	-	-		-		1.750	Nov 2020	-		1.750	0.000	1.750	-
LEO Tests	TBD	A-PNT / TENCAP : Multiple Locations	-	-		-		8.000	Mar 2021	-		8.000	0.000	8.000	-
		Subtotal	1.810	0.396		0.425		11.030		-		11.030	0.000	13.661	N/A

	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	94.387	35.667		37.490		194.775		-		194.775	0.000	362.319	N/A

Remarks

The Low Earth Orbit (LEO) funding will be realigned from Program Element (PE) 1206308A Project FE5 to PE 0603766A Project 907 starting in FY21

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*

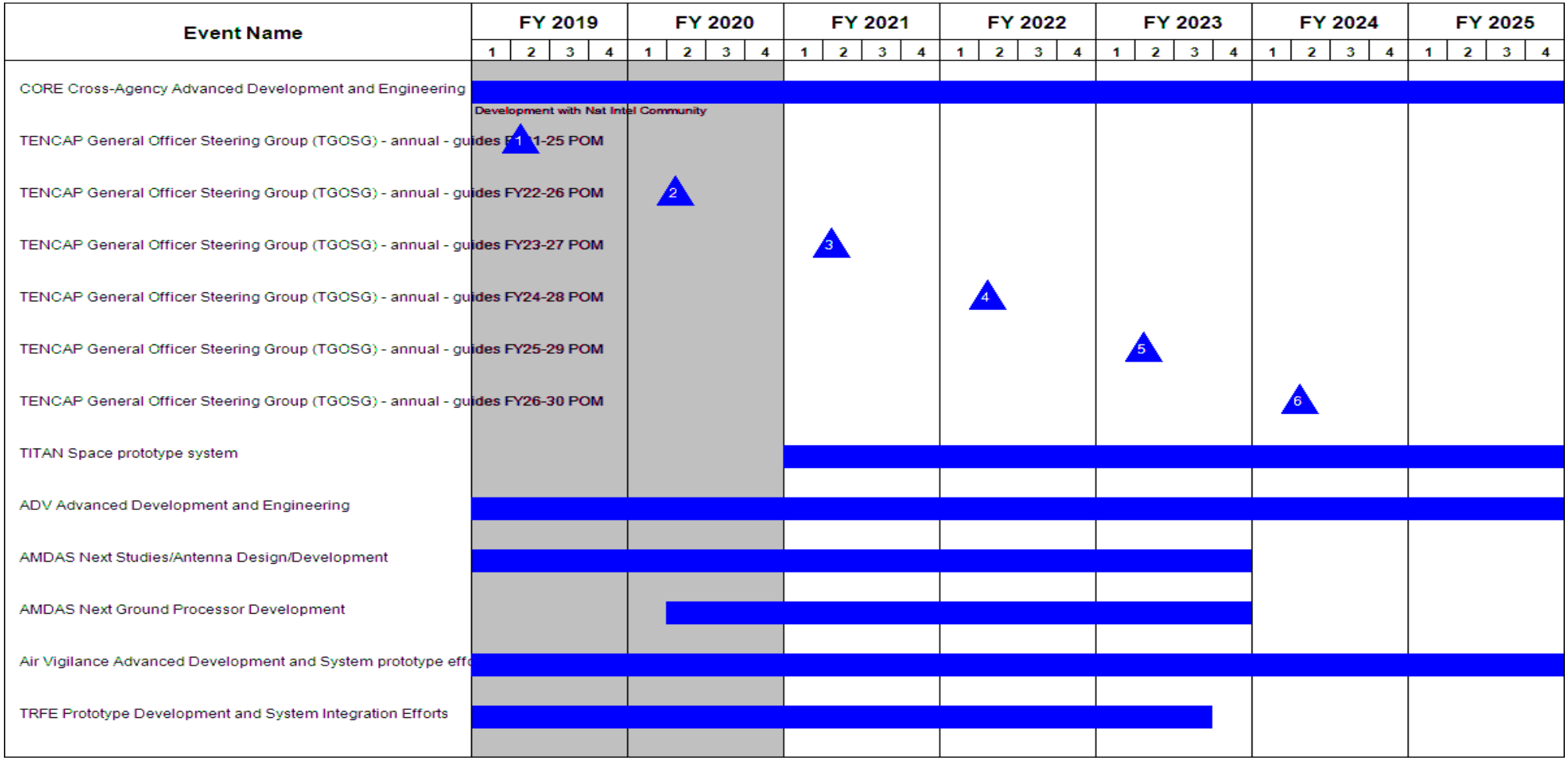

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*

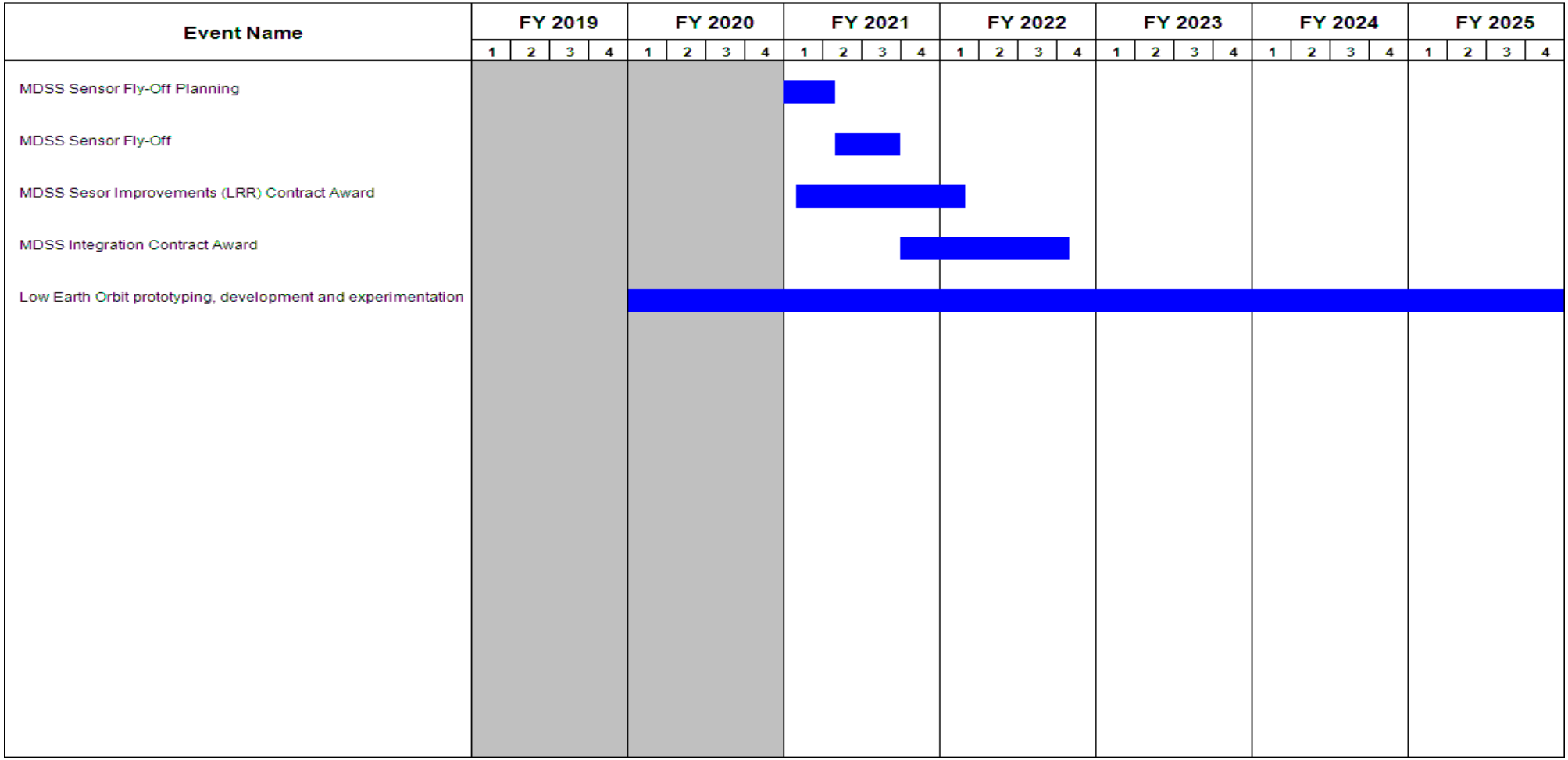

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603766A / *Tactical Electronic Surveillance System - Adv Dev*	**Project (Number/Name)** 907 / *Tactical Exploitation Of National Capabilities-MIP*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CORE Cross-Agency Advanced Development and Engineering	1	2018	4	2025
TENCAP General Officer Steering Group (TGOSG) - annual - guides FY20-24 POM	2	2018	2	2018
TENCAP General Officer Steering Group (TGOSG) - annual - guides FY21-25 POM	2	2019	2	2019
TENCAP General Officer Steering Group (TGOSG) - annual - guides FY22-26 POM	2	2020	2	2020
TENCAP General Officer Steering Group (TGOSG) - annual - guides FY23-27 POM	2	2021	2	2021
TENCAP General Officer Steering Group (TGOSG) - annual - guides FY24-28 POM	2	2022	2	2022
TENCAP General Officer Steering Group (TGOSG) - annual - guides FY25-29 POM	2	2023	2	2023
TENCAP General Officer Steering Group (TGOSG) - annual - guides FY26-30 POM	2	2024	2	2024
TITAN Space prototype system	1	2021	4	2025
ADV Advanced Development and Engineering	2	2015	4	2025
AMDAS Next Studies/Antenna Design/Development	1	2018	4	2023
AMDAS Next Ground Processor Development	2	2020	4	2023
Air Vigilance Advanced Development and System prototype efforts	3	2013	4	2025
TRFE Prototype Development and System Integration Efforts	1	2018	3	2023
MDSS Sensor Fly-Off Planning	1	2021	2	2021
MDSS Sensor Fly-Off	2	2021	3	2021
MDSS Sesor Improvements (LRR) Contract Award	1	2021	1	2022
MDSS Integration Contract Award	4	2021	4	2022
Low Earth Orbit prototyping, development and experimentation	1	2020	4	2025