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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army **Date:** February 2016

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 0203740A / Maneuver Control System
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	43.453	15.408	4.031	-	4.031	6.435	6.222	2.459	2.126	Continuing	Continuing
484: Maneuver Control System	-	43.453	15.408	4.031	-	4.031	6.435	6.222	2.459	2.126	Continuing	Continuing

A. Mission Description and Budget Item Justification

Tactical Mission Command (TMC) is a suite of products and services that provide commanders and their staff executive decision making capability in a collaborative environment. The suite of products currently in development consist of Command Web (CW), Tactical Applications (TacApps), and an Army Voice Communication System (WAVE). TMC satisfies requirements and capabilities identified in the MCS 6.4 Capability Production Document and the Battle Command Sustainment Support System (BCS3) Capability Production Document. The overarching capability includes a user-defined Common Operating Picture (COP) with integrated Command and Control (C2) and Situational Awareness (SA), map-centric collaboration, Army Mission Command Systems (and others) enabling system interoperability, data management, and enterprise services. TMC contributes to Mission Command (MC) Convergence/COE development for commanders and staff to effectively conduct collaborative mission planning and execution across a range of operations and spectrum of conflict. Legacy products supported by this Budget Item include Command Post of the Future (CPOF), Battle Command Common Services (BCCS), Logistics Widgets, and Common Tactical Vision (CTV).

FY 2017 funding will support core TMC missions.

B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	45.065	15.445	7.179	-	7.179
Current President's Budget	43.453	15.408	4.031	-	4.031
Total Adjustments	-1.612	-0.037	-3.148	-	-3.148
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.612	-0.037			
• Other Adjustments 1	-	-	-3.148	-	-3.148

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0203740A / <i>Maneuver Control System</i>				Project (Number/Name) 484 / <i>Maneuver Control System</i>			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
484: <i>Maneuver Control System</i>	-	43.453	15.408	4.031	-	4.031	6.435	6.222	2.459	2.126	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Tactical Mission Command (TMC) is a portfolio of products and services that enable commanders and their staff with collaborative environment, planning tools, and Common Operation Picture (COP) management and other maneuver and logistics functional tools. The overarching capability includes above platform level user-defined COP with integrated Command and Control (C2) and Situational Awareness (SA), map-centric collaboration, Army Mission Command System and other enabling system interoperability, data management and enterprise services. Products include:

Tactical Applications are the implementation of essential warfighting functions (e.g. maneuver, fires, engineering, logistics, common maps) that incorporate a common look and feel to application-based capabilities leveraging common services and infrastructure. Provides real time rich collaboration across echelons that can run on variety of end user devices and are compliant w/COE guidance

Command Web is a set of modular software widgets served up over the web providing engineering functionality. Improved supportability and ease-of-use in robust network environments (v2 timeline, compliant w/COE guidance)

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

	FY 2015	FY 2016	FY 2017
Title: Tactical Applications (TacApps)	26.277	9.481	2.064
Description: Implementation of essential warfighting functions that incorporate a common look and feel to application based capabilities leveraging common services and infrastructure which are COE/CPCE compliant. Provides real time rich collaboration across echelons that can run on both client and tablet			
FY 2015 Accomplishments: Developing detailed requirements, architecture and design in support of COE CPCE contributions			
FY 2016 Plans: COE CPCE compliant solution set encompassing the capabilities of CW, CTV, CPOF, & Logistic Widgets with in a seamless suite. Enhance ease of use and admin simplification			
FY 2017 Plans: COE CPCE compliant solution set encompassing the capabilities of CW, CTV, CPOF, & Logistic Widgets with in a seamless suite. Enhance ease of use and admin simplification			
Title: Tactical Public Key Infrastructure (PKI) development for TacApps	-	-	1.096

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2015	FY 2016	FY 2017
<p>Description: Using PKI certificates the smart client and web client SW will authenticate users and processes. The authentication of processes will be done via the SW and users would not be impacted while operating the system.</p> <p>FY 2017 Plans: Tactical PKI development for TacApps</p>				
<p>Title: Command Web Development</p> <p>Description: Command Web provides modular software widgets served up over the web providing engineering functionality. Improved supportability and ease-of-use in robust network environments (compliant w/COE guidance)</p> <p>FY 2016 Plans: Patches required to meet Net ready Key Performance Parameters (KPPs)</p> <p>FY 2017 Plans: Fixes that may be realized during Operational Test</p>		-	0.441	0.150
<p>Title: Program Management Office</p> <p>Description: Codification of program operational requirements into discrete technical packages for development, testing, deployment, and support over the systems lifecycle.</p> <p>FY 2016 Plans: Codification of program operational requirements into discrete technical packages for development, testing, deployment, and support over the systems lifecycle</p> <p>FY 2017 Plans: Codification of program operational requirements into discrete technical packages for development, testing, deployment, and support over the systems lifecycle</p>		-	2.334	0.400
<p>Title: Test and Evaluation</p> <p>Description: Encompasses formal test (operational assessment/test, joint certification, interoperability, and information assurance) and informal testing such as acceptance testing and risk reduction testing.</p> <p>FY 2016 Plans: Formal test (Joint certification, interoperability, and information assurance) and informal testing such as acceptance testing and risk reduction testing.</p> <p>FY 2017 Plans:</p>		-	3.152	0.321

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
Formal test (Joint certification, interoperability, and information assurance) and informal testing such as acceptance testing and risk reduction testing.			
Title: Mission Command Convergence Description: Mission Command Convergence Development and Integration	8.440	-	-
FY 2015 Accomplishments: Mission Command Convergence - Software Development and Integration for BCS3 and Common Software (CS)			
Title: Battle Command Common Services Development Description: Battle Command Common Services Development	8.736	-	-
FY 2015 Accomplishments: Battle Command Common Services Development			
Accomplishments/Planned Programs Subtotals	43.453	15.408	4.031

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Funding: <i>BA9320 Maneuver Control System (MCS)</i>	103.055	125.657	151.318	-	151.318	152.338	104.749	75.436	9.928	Continuing	Continuing
• SPARES: <i>BS9710 MCS Spares Procurement</i>	0.637	0.626	0.593	-	0.593	4.869	4.873	-	-	Continuing	Continuing

Remarks

Product Manager TMC also executes funding from the Common Software budget line (0604818A 334) and for CPCE specific activities TMC executes the CPCE budget line (0604818A EJ4).

D. Acquisition Strategy

In accordance with the Training and Doctrine Command (TRADOC) requirements document approved in 2008, Maneuver Control System Capabilities Production Document, software capability will be developed in 3-year increments in support of Common Operating Environment (COE) Guidance designed to deploy specified Mission Command Essential Capabilities to operating force commanders and their integrated battle staffs. This strategy accounts for subsequent Army directives and continued migration to the Army COE; designed to optimize opportunities for improved interoperability. The products developed under this funding line are an integral part of the Army Mission Command System of Systems.

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E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army **Date:** February 2016

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203740A / Maneuver Control System	Project (Number/Name) 484 / Maneuver Control System
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Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Mgmt	Various	PM Mission Command : Aberdeen Proving Grounds, MD	15.680	2.112	Jan 2015	2.334	Jan 2016	0.400	Jan 2017	-		0.400	Continuing	Continuing	Continuing
Subtotal			15.680	2.112		2.334		0.400		-		0.400	-	-	-

Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Tactical Applications (TacApps)	IA	Software Development: WSEC : Picatinny Arsenal, NJ	0.000	9.898	Mar 2015	9.481	Mar 2016	2.064	Mar 2017	-		2.064	0	21.443	0
Tactical PKI development for TacApps	IA	Development: WSEC : Picatinny Arsenal, NJ	0.000	-		-		1.096	Jan 2017	-		1.096	0	1.096	0
Command Web Development	Various	CECOM SEC : APG, MD	1.009	-		0.441	Oct 2015	0.150	Oct 2016	-		0.150	0	1.600	0
Log Widget Development	TBD	Development: Government Agency : TBD	2.011	1.654	Apr 2015	-		-		-		-	Continuing	Continuing	0
Misc Contracts	Various	Various : Various	24.931	-		-		-		-		-	Continuing	Continuing	Continuing
ABCS SoS Contract (Joint Convergence Development)	Various	Lockheed Martin : Tinton Falls, NJ	6.404	-		-		-		-		-	Continuing	Continuing	Continuing
Technical Support	Various	PM Mission Command/SEC : Various	27.251	-		-		-		-		-	Continuing	Continuing	Continuing
CPOF Development	Various	General Dynamics : Scottsdale, AZ	137.255	-		-		-		-		-	Continuing	Continuing	Continuing
ABCS SoS Contract (Joint Convergence Development) Follow-on	Various	General Dynamics : Scottsdale, AZ	1.025	-		-		-		-		-	Continuing	Continuing	0

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army **Date:** February 2016

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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Command Convergence Development & Integration	Various	Various : Various	42.698	-		-		-		-		-	Continuing	Continuing	Continuing
Mission Command Convergence - CP CE Software Development & Integration (Common Software)	Various	software development Future Skies : APG, MD	3.462	7.593	Jan 2015	-		-		-		-	0	11.055	0
Mission Command Convergence Development & Integration (TAIS)	Various	software development SED : Redstone Arsenal, AL	2.103	-		-		-		-		-	0	2.103	0
Software Development & Technical Support for BCCS	Various	CECOM Software Engineering Center : APG, MD	60.976	7.930	Nov 2014	-		-		-		-	Continuing	Continuing	Continuing
PAL Integration	IA	SRI : AZ	11.000	-		-		-		-		-	Continuing	Continuing	0
Subtotal			320.125	27.075		9.922		3.310		-		3.310	-	-	-

Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Misc Engineering Support	Various	PM Mission Command/SEC : Aberdeen Proving Ground, MD	9.190	1.150	Feb 2015	-		-		-		-	Continuing	Continuing	Continuing
Misc Contracts	Various	PM Mission Command : Aberdeen Proving Ground	5.743	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			14.933	1.150		-		-		-		-	-	-	-

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army **Date:** February 2016

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203740A / <i>Maneuver Control System</i>	Project (Number/Name) 484 / <i>Maneuver Control System</i>
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Event Name	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
	COE V2																											
COE v2 Arch, System Engineering, & Dev																												
(1) AWA 16.1					AWA 16.1																							
(2) Command Web Operational Test					Cmd Web OT																							
(3) NIE 16.2									NIE 16.2 (V2 Operational Assessment)																			
(4) AWA 17.1									AWA 7.1																			
(5) NIE 17.2													NIE 17.2															
COE V3																												
COE v3 Arch, System Engineering, & Dev																												
(6) AWA 18.1													AWA 18.1															
(7) NIE 18.2													NIE 18.2 (V3) Operational Assessment															
(8) Tactical Applications Operational Test																	Tac Apps OT											
(9) AWA 19.1																	AWA 19.1											

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army **Date:** February 2016

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Event Name	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
(1) NIE 19.2 COE V4 Development and Test																	▲ NIE 19.2								COE V4 Development and Test			

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army **Date:** February 2016

Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203740A / <i>Maneuver Control System</i>	Project (Number/Name) 484 / <i>Maneuver Control System</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
COE V2	2	2012	2	2017
COE v2 Arch, System Engineering, & Dev	2	2012	2	2016
AWA 16.1	1	2016	1	2016
Command Web Operational Test	2	2016	2	2016
NIE 16.2	3	2016	3	2016
AWA 17.1	1	2017	1	2017
NIE 17.2	3	2017	3	2017
COE V3	4	2014	3	2019
COE v3 Arch, System Engineering, & Dev	4	2014	3	2018
AWA 18.1	1	2018	1	2018
NIE 18.2	3	2018	3	2018
Tactical Applications Operational Test	4	2018	4	2018
AWA 19.1	1	2019	1	2019
NIE 19.2	3	2019	3	2019
COE V4 Development and Test	2	2020	4	2021

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