

UNCLASSIFIED

**Department of Defense  
Fiscal Year (FY) 2019 Budget Estimates**

February 2018



**The Joint Staff**

*Defense-Wide Justification Book Volume 5 of 5*

***Research, Development, Test & Evaluation, Defense-Wide***

UNCLASSIFIED

**UNCLASSIFIED**

**THIS PAGE INTENTIONALLY LEFT BLANK**

**UNCLASSIFIED**

**UNCLASSIFIED**

The Joint Staff • Budget Estimates FY 2019 • RDT&E Program

**Table of Volumes**

**Defense Advanced Research Projects Agency..... Volume 1**

**Missile Defense Agency..... Volume 2**

**Office of the Secretary Of Defense..... Volume 3**

**Chemical and Biological Defense Program.....Volume 4**

**Defense Contract Management Agency..... Volume 5**

**DoD Human Resources Activity..... Volume 5**

**Defense Information Systems Agency.....Volume 5**

**Defense Logistics Agency.....Volume 5**

**Defense Security Cooperation Agency..... Volume 5**

**Defense Security Service..... Volume 5**

**Defense Technical Information Center.....Volume 5**

**Defense Threat Reduction Agency.....Volume 5**

**The Joint Staff..... Volume 5**

**United States Special Operations Command..... Volume 5**

**Washington Headquarters Service..... Volume 5**

**Operational Test and Evaluation, Defense..... Volume 5**

**UNCLASSIFIED**

**UNCLASSIFIED**

The Joint Staff • Budget Estimates FY 2019 • RDT&E Program

**Defense Geospatial Intelligence Agency..... (see NIP and MIP Justification Books)**  
**Defense Intelligence Agency..... (see NIP and MIP Justification Books)**  
**National Security Agency.....(see NIP and MIP Justification Books)**  
**Defense Contract Audit Agency..... Volume 5**

**UNCLASSIFIED**

**UNCLASSIFIED**

The Joint Staff • Budget Estimates FY 2019 • RDT&E Program

**Volume 5 Table of Contents**

**Comptroller Exhibit R-1..... Volume 5 - v**  
**Program Element Table of Contents (by Budget Activity then Line Item Number)..... Volume 5 - xxiii**  
**Program Element Table of Contents (Alphabetically by Program Element Title)..... Volume 5 - xxv**  
**Exhibit R-2's..... Volume 5 - 1**

**UNCLASSIFIED**

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Department of Defense  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Appropriation	FY 2017 (Base + OCO)	FY 2018 PB Request with CR Adj Base	FY 2018 Total PB Requests* with CR Adj Base	FY 2018 PB Request with CR Adj OCO	FY 2018 Total PB Requests+ with CR Adj OCO
Research, Development, Test & Eval, DW	66,555	116,141	116,141		
Total Research, Development, Test & Evaluation	66,555	116,141	116,141		

UNCLASSIFIED

Department of Defense  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Appropriation	FY 2018		FY 2018		FY 2018	
	FY 2018 Emergency Requests**	Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req Emergency	Total PB Requests* with CR Adj Base + OCO + Emergency**	Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency
Research, Development, Test & Eval, DW				116,141		116,141
Total Research, Development, Test & Evaluation				116,141		116,141



UNCLASSIFIED

Department of Defense  
FY 2019 President's Budget  
Exhibit R-1 FY 2019 President's Budget  
Total Obligational Authority  
(Dollars in Thousands)

26 Jan 2018

Appropriation -----	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Research, Development, Test & Eval, DW	128,287		128,287
Total Research, Development, Test & Evaluation	128,287		128,287

## UNCLASSIFIED

Department of Defense  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

	FY 2017 (Base + OCO)	FY 2018 PB Request with CR Adj Base	FY 2018 Total PB Requests* with CR Adj Base	FY 2018 PB Request with CR Adj OCO	FY 2018 Total PB Requests+ with CR Adj OCO
<u>Summary Recap of Budget Activities</u>					
Advanced Component Development And Prototypes	23,630	23,638	23,638		
Management Support	39,063	89,466	89,466		
Operational System Development	3,862	3,037	3,037		
Total Research, Development, Test & Evaluation	66,555	116,141	116,141		
<u>Summary Recap of FYDP Programs</u>					
General Purpose Forces	8,498	10,749	10,749		
Intelligence and Communications	857	673	673		
Research and Development	56,374	60,219	60,219		
Training Medical and Other		44,500	44,500		
Administration and Associated Activities	826				
Total Research, Development, Test & Evaluation	66,555	116,141	116,141		

UNCLASSIFIED

Department of Defense  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req Emergency	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency**	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency
<u>Summary Recap of Budget Activities</u>					
Advanced Component Development And Prototypes			23,638		23,638
Management Support			89,466		89,466
Operational System Development			3,037		3,037
Total Research, Development, Test & Evaluation			116,141		116,141
<u>Summary Recap of FYDP Programs</u>					
General Purpose Forces			10,749		10,749
Intelligence and Communications			673		673
Research and Development			60,219		60,219
Training Medical and Other			44,500		44,500
Administration and Associated Activities					
Total Research, Development, Test & Evaluation			116,141		116,141

## UNCLASSIFIED

Department of Defense  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Summary Recap of Budget Activities	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-----			
Advanced Component Development And Prototypes	22,435		22,435
Management Support	102,815		102,815
Operational System Development	3,037		3,037
Total Research, Development, Test & Evaluation	128,287		128,287
Summary Recap of FYDP Programs			
-----			
General Purpose Forces	9,695		9,695
Intelligence and Communications	652		652
Research and Development	75,000		75,000
Training Medical and Other	42,940		42,940
Administration and Associated Activities			
Total Research, Development, Test & Evaluation	128,287		128,287

## UNCLASSIFIED

Defense-Wide  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Summary Recap of Budget Activities	FY 2017 (Base + OCO)	FY 2018 PB Request with CR Adj Base	FY 2018 Total PB Requests* with CR Adj Base	FY 2018 PB Request with CR Adj OCO	FY 2018 Total PB Requests+ with CR Adj OCO
Advanced Component Development And Prototypes	23,630	23,638	23,638		
Management Support	39,063	89,466	89,466		
Operational System Development	3,862	3,037	3,037		
Total Research, Development, Test & Evaluation	66,555	116,141	116,141		
 Summary Recap of FYDP Programs					
General Purpose Forces	8,498	10,749	10,749		
Intelligence and Communications	857	673	673		
Research and Development	56,374	60,219	60,219		
Training Medical and Other		44,500	44,500		
Administration and Associated Activities	826				
Total Research, Development, Test & Evaluation	66,555	116,141	116,141		

UNCLASSIFIED

Defense-Wide  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

	FY 2018 Emergency Requests**	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req Emergency	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency**	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency
<u>Summary Recap of Budget Activities</u>						
Advanced Component Development And Prototypes				23,638		23,638
Management Support				89,466		89,466
Operational System Development				3,037		3,037
Total Research, Development, Test & Evaluation				116,141		116,141
<u>Summary Recap of FYDP Programs</u>						
General Purpose Forces				10,749		10,749
Intelligence and Communications				673		673
Research and Development				60,219		60,219
Training Medical and Other				44,500		44,500
Administration and Associated Activities						
Total Research, Development, Test & Evaluation				116,141		116,141

UNCLASSIFIED

Defense-Wide  
FY 2019 President's Budget  
Exhibit R-1 FY 2019 President's Budget  
Total Obligational Authority  
(Dollars in Thousands)

26 Jan 2018

Summary Recap of Budget Activities	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-----			
Advanced Component Development And Prototypes	22,435		22,435
Management Support	102,815		102,815
Operational System Development	3,037		3,037
Total Research, Development, Test & Evaluation	128,287		128,287
Summary Recap of FYDP Programs			
-----			
General Purpose Forces	9,695		9,695
Intelligence and Communications	652		652
Research and Development	75,000		75,000
Training Medical and Other	42,940		42,940
Administration and Associated Activities			
Total Research, Development, Test & Evaluation	128,287		128,287

UNCLASSIFIED

Defense-Wide  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Appropriation	FY 2017 (Base + OCO)	FY 2018 PB Request with CR Adj Base	FY 2018 Total PB Requests* with CR Adj Base	FY 2018 PB Request with CR Adj OCO	FY 2018 Total PB Requests+ with CR Adj OCO
The Joint Staff	66,555	116,141	116,141		
Total Research, Development, Test & Evaluation	66,555	116,141	116,141		



UNCLASSIFIED

Defense-Wide  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Appropriation	FY 2018		FY 2018		FY 2018	
	Emergency Requests**	Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req Emergency	Total PB Requests* with CR Adj Base + OCO + Emergency**	Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency
The Joint Staff				116,141		116,141
Total Research, Development, Test & Evaluation				116,141		116,141

UNCLASSIFIED

Defense-Wide  
FY 2019 President's Budget  
Exhibit R-1 FY 2019 President's Budget  
Total Obligational Authority  
(Dollars in Thousands)

26 Jan 2018

Appropriation -----	FY 2019 Base	FY 2019 OCO	FY 2019 Total
The Joint Staff	128,287		128,287
Total Research, Development, Test & Evaluation	128,287		128,287

UNCLASSIFIED

Defense-Wide  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Appropriation: 0400D Research, Development, Test & Eval, DW

Line No	Program Element Number	Item	Act	FY 2017 (Base + OCO)	FY 2018 PB Request with CR Adj Base	FY 2018 Total PB Requests* with CR Adj Base	FY 2018 PB Request with CR Adj OCO	FY 2018 Total PB Requests+ with CR Adj OCO	S e c
103	0604826J	Joint C5 Capability Development, Integration and interoperability Assessments	04	23,630	23,638	23,638			U
		Advanced Component Development And Prototypes		23,630	23,638	23,638			
144	0605126J	Joint Integrated Air and Missile Defense Organization (JIAMDO)	06	32,744	36,581	36,581			U
172	0204571J	Joint Staff Analytical Support	06	5,462	7,712	7,712			U
175	0303166J	Support to Information Operations (IO) Capabilities	06	857	673	673			U
183	0804767J	COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	06		44,500	44,500			U
184	0804768J	COCOM Exercise Engagement and Training Transformation (CE2T2) - non-MHA	06						U
		Management Support		39,063	89,466	89,466			
196	0208043J	Planning and Decision Aid System (PDAS)	07	3,036	3,037	3,037			U
245	0902298J	Management HQ - OJCS	07	826					U
		Operational System Development		3,862	3,037	3,037			
Total Research, Development, Test & Eval, DW				66,555	116,141	116,141			

R-119PB: FY 2019 President's Budget (Published Version), as of January 26, 2018 at 13:09:26

UNCLASSIFIED

Defense-Wide  
FY 2019 President's Budget  
Exhibit R-1 FY 2019 President's Budget  
Total Obligational Authority  
(Dollars in Thousands)

26 Jan 2018

Appropriation: 0400D Research, Development, Test & Eval, DW

Line No	Program Element Number	Item	Act	FY 2018		FY 2018	FY 2018	FY 2018	FY 2018	S
				Emergency Requests**	P.L.115-96*** Div B MDDE + Ship Repairs	Remaining Req Emergency	Total PB Requests* with CR Adj Base + OCO + Emergency**	Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs		
103	0604826J	Joint C5 Capability Development, Integration and interoperability Assessments	04				23,638		23,638	U
		Advanced Component Development And Prototypes					23,638		23,638	
144	0605126J	Joint Integrated Air and Missile Defense Organization (JIAMDO)	06				36,581		36,581	U
172	0204571J	Joint Staff Analytical Support	06				7,712		7,712	U
175	0303166J	Support to Information Operations (IO) Capabilities	06				673		673	U
183	0804767J	COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	06				44,500		44,500	U
184	0804768J	COCOM Exercise Engagement and Training Transformation (CE2T2) - non-MHA	06							U
		Management Support					89,466		89,466	
196	0208043J	Planning and Decision Aid System (PDAS)	07				3,037		3,037	U
245	0902298J	Management HQ - OJCS	07							U
		Operational System Development					3,037		3,037	
Total Research, Development, Test & Eval, DW							116,141		116,141	

R-119PB: FY 2019 President's Budget (Published Version), as of January 26, 2018 at 13:09:26

UNCLASSIFIED

## UNCLASSIFIED

Defense-Wide  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Appropriation: 0400D Research, Development, Test &amp; Eval, DW

Line No	Program Element Number	Item	Act	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Se
103	0604826J	Joint C5 Capability Development, Integration and interoperability Assessments	04	22,435		22,435	U
		Advanced Component Development And Prototypes		22,435		22,435	
144	0605126J	Joint Integrated Air and Missile Defense Organization (JIAMDO)	06	52,565		52,565	U
172	0204571J	Joint Staff Analytical Support	06	6,658		6,658	U
175	0303166J	Support to Information Operations (IO) Capabilities	06	652		652	U
183	0804767J	COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	06				U
184	0804768J	COCOM Exercise Engagement and Training Transformation (CE2T2) - non-MHA	06	42,940		42,940	U
		Management Support		102,815		102,815	
196	0208043J	Planning and Decision Aid System (PDAS)	07	3,037		3,037	U
245	0902298J	Management HQ - OJCS	07				U
		Operational System Development		3,037		3,037	
Total Research, Development, Test & Eval, DW				128,287		128,287	

R-119PB: FY 2019 President's Budget (Published Version), as of January 26, 2018 at 13:09:26

UNCLASSIFIED

## UNCLASSIFIED

The Joint Staff  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Appropriation: 0400D Research, Development, Test &amp; Eval, DW

Line No	Program Element Number	Item	Act	FY 2017 (Base + OCO)	FY 2018 PB Request with CR Adj Base	FY 2018 Total PB Requests* with CR Adj Base	FY 2018 PB Request with CR Adj OCO	FY 2018 Total PB Requests+ with CR Adj OCO	S e c
103	0604826J	Joint C5 Capability Development, Integration and interoperability Assessments	04	23,630	23,638	23,638			U
		Advanced Component Development And Prototypes		23,630	23,638	23,638			
144	0605126J	Joint Integrated Air and Missile Defense Organization (JIAMDO)	06	32,744	36,581	36,581			U
172	0204571J	Joint Staff Analytical Support	06	5,462	7,712	7,712			U
175	0303166J	Support to Information Operations (IO) Capabilities	06	857	673	673			U
183	0804767J	COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	06		44,500	44,500			U
184	0804768J	COCOM Exercise Engagement and Training Transformation (CE2T2) - non-MHA	06						U
		Management Support		39,063	89,466	89,466			
196	0208043J	Planning and Decision Aid System (PDAS)	07	3,036	3,037	3,037			U
245	0902298J	Management HQ - OJCS	07	826					U
		Operational System Development		3,862	3,037	3,037			
Total The Joint Staff				66,555	116,141	116,141			

R-119PB: FY 2019 President's Budget (Published Version), as of January 26, 2018 at 13:09:26

UNCLASSIFIED

Page D-4  
Volume 5 - xx

UNCLASSIFIED

The Joint Staff  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Appropriation: 0400D Research, Development, Test & Eval, DW

Line No	Program Element Number	Item	Act	FY 2018		FY 2018	FY 2018	FY 2018	S	
				Emergency Requests**	P.L.115-96*** Div B MDDE + Ship Repairs	Remaining Req Emergency	Total PB Requests* with CR Adj Base + OCO + Emergency**	Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs		FY 2018 Remaining Req with CR Adj Base + OCO + Emergency
103	0604826J	Joint C5 Capability Development, Integration and interoperability Assessments	04				23,638		23,638	U
		Advanced Component Development And Prototypes					23,638		23,638	
144	0605126J	Joint Integrated Air and Missile Defense Organization (JIAMDO)	06				36,581		36,581	U
172	0204571J	Joint Staff Analytical Support	06				7,712		7,712	U
175	0303166J	Support to Information Operations (IO) Capabilities	06				673		673	U
183	0804767J	COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	06				44,500		44,500	U
184	0804768J	COCOM Exercise Engagement and Training Transformation (CE2T2) - non-MHA	06							U
		Management Support					89,466		89,466	
196	0208043J	Planning and Decision Aid System (PDAS)	07				3,037		3,037	U
245	0902298J	Management HQ - OJCS	07							U
		Operational System Development					3,037		3,037	
Total The Joint Staff							116,141		116,141	

UNCLASSIFIED

The Joint Staff  
 FY 2019 President's Budget  
 Exhibit R-1 FY 2019 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

26 Jan 2018

Appropriation: 0400D Research, Development, Test & Eval, DW

Line No	Program Element Number	Item	Act	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Se
103	0604826J	Joint C5 Capability Development, Integration and interoperability Assessments	04	22,435		22,435	U
		Advanced Component Development And Prototypes		22,435		22,435	
144	0605126J	Joint Integrated Air and Missile Defense Organization (JIAMDO)	06	52,565		52,565	U
172	0204571J	Joint Staff Analytical Support	06	6,658		6,658	U
175	0303166J	Support to Information Operations (IO) Capabilities	06	652		652	U
183	0804767J	COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	06				U
184	0804768J	COCOM Exercise Engagement and Training Transformation (CE2T2) - non-MHA	06	42,940		42,940	U
		Management Support		102,815		102,815	
196	0208043J	Planning and Decision Aid System (PDAS)	07	3,037		3,037	U
245	0902298J	Management HQ - OJCS	07				U
		Operational System Development		3,037		3,037	
Total The Joint Staff				128,287		128,287	

R-119PB: FY 2019 President's Budget (Published Version), as of January 26, 2018 at 13:09:26



**UNCLASSIFIED**

The Joint Staff • Budget Estimates FY 2019 • RDT&E Program

**Program Element Table of Contents (by Budget Activity then Line Item Number)**

***Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide***

---

<b>Line #</b>	<b>Budget Activity</b>	<b>Program Element Number</b>	<b>Program Element Title</b>	<b>Page</b>
103	04	0604826J	Joint C5 Capability Development, Integration, and Interoperability Assessments.....	Volume 5 - 1

***Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide***

---

<b>Line #</b>	<b>Budget Activity</b>	<b>Program Element Number</b>	<b>Program Element Title</b>	<b>Page</b>
144	06	0605126J	Joint Integrated Air & Missile Defense Organization (JIAMDO).....	Volume 5 - 25
172	06	0204571J	Joint Staff Analytical Support.....	Volume 5 - 45
175	06	0303166J	Support to Information Operations (IO) Capabilities.....	Volume 5 - 55
183	06	0804767J	COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA.....	Volume 5 - 59
184	06	0804768J	COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA.....	Volume 5 - 79

**UNCLASSIFIED**

**UNCLASSIFIED**

The Joint Staff • Budget Estimates FY 2019 • RDT&E Program

***Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide***

---

<b>Line #</b>	<b>Budget Activity</b>	<b>Program Element Number</b>	<b>Program Element Title</b>	<b>Page</b>
196	07	0208043J	Planning and Decision Aid System (PDAS).....	Volume 5 - 103
245	07	0902298J	Management HQ - OJCS.....	Volume 5 - 105

**UNCLASSIFIED**

**UNCLASSIFIED**

The Joint Staff • Budget Estimates FY 2019 • RDT&E Program

**Program Element Table of Contents (Alphabetically by Program Element Title)**

<b>Program Element Title</b>	<b>Program Element Number</b>	<b>Line #</b>	<b>BA</b>	<b>Page</b>
COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	0804767J	183	06.....	Volume 5 - 59
COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA	0804768J	184	06.....	Volume 5 - 79
Joint C5 Capability Development, Integration, and Interoperability Assessments	0604826J	103	04.....	Volume 5 - 1
Joint Integrated Air & Missile Defense Organization (JIAMDO)	0605126J	144	06.....	Volume 5 - 25
Joint Staff Analytical Support	0204571J	172	06.....	Volume 5 - 45
Management HQ - OJCS	0902298J	245	07.....	Volume 5 - 105
Planning and Decision Aid System (PDAS)	0208043J	196	07.....	Volume 5 - 103
Support to Information Operations (IO) Capabilities	0303166J	175	06.....	Volume 5 - 55

**UNCLASSIFIED**

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification: PB 2019 The Joint Staff** **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604826J <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</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
Total Program Element	21.700	23.630	23.638	22.435	-	22.435	20.095	20.108	20.094	20.094	Continuing	Continuing
001: <i>C5 Assessments and Analyses</i>	10.196	12.886	12.898	11.648	-	11.648	9.308	9.321	9.307	9.307	Continuing	Continuing
002: <i>C5 Capability Development</i>	7.079	6.594	6.590	5.787	-	5.787	5.787	5.787	5.787	5.787	Continuing	Continuing
003: <i>Joint Fires C2 Interoperability</i>	4.425	4.150	4.150	5.000	-	5.000	5.000	5.000	5.000	5.000	Continuing	Continuing

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

Lead command, control, communications, computers, and cyber (C5) assessments, analyses, capability development, and joint fires command and control (C2) interoperability efforts required to achieve an effective, integrated, and interoperable joint force. Efforts include C5 requirements determination, C5 architectures development and integration, C5 data standardization, joint fires C2 interoperability, and C5 integration and interoperability assessments.

**B. Program Change Summary (\$ in Millions)**

	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019 Base</u>	<u>FY 2019 OCO</u>	<u>FY 2019 Total</u>
Previous President's Budget	23.642	23.638	23.148	-	23.148
Current President's Budget	23.630	23.638	22.435	-	22.435
Total Adjustments	-0.012	0.000	-0.713	-	-0.713
• Congressional General Reductions	-0.012	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Economic Adjustment (inflation rate change)	-	-	-0.713	-	-0.713

**Change Summary Explanation**

Decrease in funding for FY 2017 due to undistributed Congressional mark to FFRDC.

Decrease in funding for FY 2019 thru FY 2023 is a result of (1) mandated 25% Major Headquarters Activities (MHA) reductions prescribed by the 2016 NDAA and (2) changes in economic assumptions for non-fuel and non-pay inflation.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>					<b>Project (Number/Name)</b> 001 / <i>C5 Assessments and Analyses</i>		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
001: <i>C5 Assessments and Analyses</i>	10.196	12.886	12.898	11.648	-	11.648	9.308	9.321	9.307	9.307	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Conduct analysis and assessment activities to inform and enhance joint warfighter capabilities in support of national security requirements. Provide timely, facts-based findings and recommendations to DoD decision-making processes that validate operational requirements and apply funding to field effective, interoperable capabilities. Conduct interoperability assessments and analyses that evaluate capability and interoperability of fielded and emerging command, control, communications, computers, and cyber (C5), and systems in response to operational issues and shortfalls. Conduct integration assessment efforts focused on emerging capabilities in wireless devices and security, tactical command and control and networking, satellite communications, advanced secure digital datalinks, and coalition data exchanges.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> C5 Assessments and Analyses	12.886	12.898	11.648
<p><b>Description:</b> Support the Chairman's statutory requirement to advise the Secretary of Defense "on development of joint command, control, communications and cyber capability, including integration and interoperability of such capability through requirements, integrated architectures, data standards and assessments." Also supports the Chairman's focus area of improving joint warfighting capability and the SECDEF's line of effort to strengthen alliances and attract new partners. Interoperability is assessed and integrated solutions are developed to improve C5 system performance by providing recommendations based on operational architectures and evolving standards and data products. Combatant Commands, Services, agencies and coalition partners at the joint force headquarters level are provided a laboratory, exercise and assessment venue for the warfighter and capability developer to identify and solve interoperability, integration, and cyber issues with current and near-term joint and coalition capabilities.</p> <p><b>FY 2018 Plans:</b> Conduct interoperability assessments and analysis in both field and persistent environments that evaluate capability and interoperability of fielded and emerging C5 systems in response to operational issues and shortfalls. FY 2018 focus areas include: capability development in command and control, mission partner environment, joint fires support, and operations in cyberspace, and joint test and evaluation of digitally aided close air support. C5 assessments and analyses activities are conducted through (1) persistent, reconfigurable C5 laboratories that connect joint and coalition system of systems operational environments to other live, virtual, and constructive environments across national and multi-national operational, research, and test networks leveraging operational venues/exercises; and (2) a deployable assessment capability (including contested joint</p>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 001 / <i>C5 Assessments and Analyses</i>

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<p>environments) that allows range instrumentation and the collection and analysis of quantitative data in replicated operational environments. Projects include:</p> <p>Coalition interoperability assurance validation (CIAV) assessments – conduct interoperability assessments of coalition systems supporting coalition mission threads. CIAV assessments validate complete and timely exchange of critical information and improve overall interoperability allowing coalition forces to fight more effectively and efficiently.</p> <p>Advanced tactical wireless integration capability – perform technical integration and assessments of advanced communication systems hardware, software, and security solutions to identify capabilities that address warfighter requirements.</p> <p>Joint fires support joint mission thread interoperability assessment – assess joint and coalition fire support command and control systems digital (machine-to-machine) interoperability and provide findings and observations.</p> <p>Advanced wide area network security capability integration – demonstrate an integrated wide area network security solution using NSA approved commercial solution for classified virtual private networks between two or more sites.</p> <p>Cyber Guard / Cyber Flag 2018 assessment and technical support – provide C2 systems, a common operational picture, and conduct assessment of cyber effects on these systems integrated into the Navy defensive cyber operation DoD Information Network (DoDIN) Simulation, Training, and Exercise Platform (STEP) environment.</p> <p>Bold Quest 2018 technical demonstration – design, build, accreditation, assessment and management of the exercise networks for U.S. and coalition partners.</p> <p>Counter-UAS (C-UAS) – data collection and analysis during RTD&amp;E test events as well as in support of urgent operational needs in active operational theaters.</p> <p>C2 systems support to DoD Enterprise Cyber Range environment – provide a persistent and distributed cyber environment for cyber mission forces development.</p> <p><b>FY 2019 Plans:</b> Conduct analysis, assessment, and integration activities to inform and enhance Joint warfighter capabilities in support of national security requirements. Provide timely, facts-based findings and recommendations for action through formal DoD decision-making processes used to validate operational requirements and apply funding to field integrated, interoperable capabilities. Conduct</p>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 001 / <i>C5 Assessments and Analyses</i>

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

	FY 2017	FY 2018	FY 2019
<p>interoperability assessments, analyses, and integration that evaluate and enhance capability and interoperability of fielded and emerging command, control, communications, computers, and cyber (C5), and systems in response to operational needs and issues. Conduct integration and integration assessment efforts focused on emerging capabilities in wireless devices and security, tactical command and control and networking, satellite communications, advanced secure digital datalinks, and coalition data exchanges. Employ a deployable capability supporting the collection and analysis of decision quality data for command and control operations from the operational to lowest tactical echelons of command. Joint analysis supports capability development, acquisition, and systems employment decisions based on quantifiable performance in both actual and replicated operational environments. Projects include:</p> <p>Coalition Interoperability and Assurance Validation (CIAV) – CIAV assessments of US and coalition systems support in-theater operations by ensuring C5 system adequacy before their operational employment in the Afghan and Iraq areas of operations. CIAV is also increasing efforts in the Pacific. CIAV assessments validate complete and timely exchange of critical information and improve interoperability, enabling coalition forces to fight more effectively and efficiently.</p> <p>Classified reconfigurable operational wireless network – the integration, employment, and assessment of a single, rapidly deployed and configurable wireless network that carries multiple classifications. Network is suitable for tactical field settings, temporary installations, and fixed headquarters thereby addressing tactical, operational, and strategic requirements. Employs National Security Agency approved communications security and provides secure communications faster with less hardware and overhead.</p> <p>Joint fires support joint mission thread interoperability assessment – assess joint and coalition fire support command and control systems digital (machine-to-machine) interoperability and provide findings and observations.</p> <p>Advanced tactical cellular (4G/LTE) integration – multiple efforts to increase the availability of 4G/LTE to tactical forces. Addresses communications security, smart-phone battlefield apps, and 4G/LTE survivability in contested and austere environments.</p> <p>Bold Quest (BQ) 2019 coalition interoperability demonstrations – support the design, plan, and execution of the BQ events which address close air support, counter UAS, IFF testing, and cyber effects on operations for U.S. forces and coalition partners. Support includes accredited exercise networks, associated C2 systems, and data collection and analysis capabilities.</p> <p>Joint expeditionary integration capabilities – integrate, refine, and accelerate the migration of Special Operating Forces (SOF) battle-proven capabilities to general purpose forces in accordance with governing instructions. Rapid migration of SOF “best</p>			



**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 001 / <i>C5 Assessments and Analyses</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<p>practices” provides greater capability to general purpose forces and enhances interoperability with SOF and coalition partners. The capabilities include integrated secure radio networks, tactical data links, tactical cellular, enroute satellite communications, enhanced situational awareness, fratricide prevention, and a more efficient kill-chain.</p> <p>Battlefield intelligence trusted network environment – the integration and assessment of an enterprise environment featuring a single, aggregated intelligence sharing capability for multiple partner nations that does not compromise respective national networks or domains.</p> <p>Joint Planning Services (JPS) – operational assessment of the JPS pilot will determine if the combatant commanders and Service operational planning requirements would be met by JPS. JPS is intended to enable planners to develop and maintain complex strategic/contingency plans in a dispersed, collaborative, cross-functional joint, interagency, intergovernmental, multinational environment. JPS should also provide rapid access to authoritative, geospatially-enabled planning data and tools and efficient and expeditious information dissemination.</p> <p>Mode 5 analysis – Plan and execute analysis events at various live venues (such as RED FLAG or BOLD QUEST) in support of certification of Service Mode 5 IFF capabilities.</p> <p>USCENTCOM counter-UAS (C-UAS) support – Conduct analysis activities both at CONUS C-UAS events and in active operational theaters to evaluate effectiveness of rapidly fielded C-UAS systems. Results will inform follow-on fielding and rapid procurement decisions.</p> <p><b><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i></b> Decrease in funding for FY 2019 is a result of mandated 25% Major Headquarters Activities (MHA) reductions prescribed by the 2016 NDAA and revised economic assumptions (inflation rate change).</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	12.886	12.898	11.648

<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A
<b>Remarks</b>
<b>D. Acquisition Strategy</b> Biannual review of C4/Cyber resources includes an examination of the current and future Budget/Spend Plan, Lines of Effort and Acquisition Strategy.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff	<b>Date:</b> February 2018
---	----------------------------

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 001 / <i>C5 Assessments and Analyses</i>
--	---	--

The award of a Multi Award Contract (MAC) seeks efficiencies in the performance of requirements for C4/Cyber and Information services, and promotes contractor teaming to provide critical technical and management support. The MAC approach also seeks to reduce the costs of current contract support through the elimination of multiple fees for service contracts, and through the competitive award of contract services.

**E. Performance Metrics**

1. Conduct a minimum of 15 interoperability assessments designed to identify joint and coalition interoperability issues and recommend solutions to program managers, Combatant Commands, Services, and agencies.
2. Conduct a minimum of one broad-spectrum Counter-UAS (C-UAS) analysis event; providing data collection, analysis, and recommendations that directly address identified C-UAS capability gaps and interoperability shortfalls for partners including: Joint, Services, intergovernmental, and coalition stakeholders.
3. Provide C2 systems and persistent command, control, communications, and computers (C4) environment supporting at least two Combatant Command exercises to satisfy Combatant Command training objectives, including the cyber threat to mission systems.
4. Support up to four Squad-X experiment events, providing objective analysis on performance and interoperability that directly informs the acquisition of improved C2 capabilities for U.S. small units.
5. Support a minimum of 30 coalition interoperability assurance and validation events and provide a minimum of 100 observations/findings to resolve end-to-end mission based interoperability issues, validate tactics, techniques, and procedures, and support NATO future mission networking (FMN) and U.S. mission partner environment (MPE) plans.
6. Provide analyses for at least six field assessments/demonstrations in the areas of joint fires, C2, coalition intelligence, surveillance, and reconnaissance (CISR), digitally aided close air support (DACAS), FMN and MPE. Analyses results will inform continued development of evaluated capabilities, including acquisition/fielding decisions and tactics, techniques and procedures.
7. Provide C2 Systems and persistent C4 environment supporting at least four individual or team training events per year to meet cyber training and certification objectives.
8. Provide C2 Systems and Persistent C4 Environment to support at least four cyber assessments promoting cyber capability development.
9. Integrate at least two new capabilities per year supporting Combatant Command, Service, agency, and commercial solutions for classified and mobile computing program requirements.

**UNCLASSIFIED**

<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2019 The Joint Staff												<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments						<b>Project (Number/Name)</b> 001 / C5 Assessments and Analyses				

Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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			
Contract Management and Engineering Technical Services	C/CPFF	Various : Norfolk, Suffolk, Eglin	10.196	12.886	Oct 2016	12.898	Oct 2017	11.648	Oct 2018	-		11.648	Continuing	Continuing	-
<b>Subtotal</b>			10.196	12.886		12.898		11.648		-		11.648	Continuing	Continuing	N/A
Project Cost Totals			Prior Years	FY 2017	FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>			10.196	12.886		12.898		11.648		-		11.648	Continuing	Continuing	N/A

Remarks

**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2019 The Joint Staff</b>		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 001 / <i>C5 Assessments and Analyses</i>

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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

<b>Joint C5I</b>	
C5 Assessments and Analyses	██████████

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 001 / <i>C5 Assessments and Analyses</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Joint C5I</b>				
C5 Assessments and Analyses	1	2019	4	2019

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>					<b>Project (Number/Name)</b> 002 / <i>C5 Capability Development</i>		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
002: <i>C5 Capability Development</i>	7.079	6.594	6.590	5.787	-	5.787	5.787	5.787	5.787	5.787	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

C5 capability development functions as the DoD requirements lead for the joint command and control (C2) family of programs and requirements lead for mission partner environment (MPE); developer of joint C4 architectures, joint common systems functions, joint mission threads, lead in analysis and review of architectures and standards in joint capability development systems to ensure integration and interoperability; enable warfighter access to authoritative data sources and improve data interoperability by establishing common C2 data and service standards.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> C5 Capability Development	6.594	6.590	5.787
<b>Description:</b> Lead C2 capability development and integration in order to achieve an interdependent joint force. Supports Chairman's focus of improving joint warfighter capability. This will be accomplished through four focus areas: capability development, C4 architectures, data and services, and interoperability and integration.			
<b>FY 2018 Plans:</b> Capability Development – oversee requirements management for the Department's joint command and control (C2) family of programs.  Utilize the net-enabled requirements identification database and the decision support tool to provide accessibility and visibility into C2 capability needs and potential solutions for C2 stakeholders. Analyze/coordinate the Department's 2020-2024 C2 integrated priority lists and capability gap assessment for JROC approval. Develop/coordinate annual joint C2 FY 2019 and FY 2020 operational priorities for JROC approval, and host four Joint C2 integration workshops to better integrate DoD strategic guidance, validated requirements, operational priorities, and materiel development. Align capability requirements and JCIDS documentation to enable material solution development, and ensure warfighter equities are represented through Joint C2 governance and management forums and formal processes. Chair the newly established Global Command and Control System-Joint Enterprise (GCCS-JE) Requirements Governance Board on behalf of the JROC to oversee the execution of requirements and management of capability development. Develop capability definition packages and capability packages to support on-going enterprise Common Operational Picture (COP) GCCS-JE development, command and control information exchange environment (C2IE), cyber C2, and joint planning services capabilities, and develop warfighter assessment criteria for these capabilities. Continue to co-chair DoD's C2 Council of Colonels and update CJCSI/M 3265.01, "Joint C2 Governance and Management," to strengthen			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 002 / <i>C5 Capability Development</i>

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

	FY 2017	FY 2018	FY 2019
<p>requirements management for enterprise-level, globally integrated operations. Ensure requirements development efforts include architecture, data, cross-functional, cyber, mission partner environment and joint information environment capability areas and equities. Implement plans and schedules to assess Enterprise COP GCCS-JE incrementally developed capabilities.</p> <p>C4 Architectures - Provide architecture and joint mission thread development and analysis to support the Chairman's directed focus areas, specifically in areas of joint command and control, cyberspace, and joint and coalition interoperability. Provide architectures and analytical support as required to the Chairman's Joint Military Net Assessment. Conduct analysis and validate architectures, functional requirements documents and engineering designs that support implementation of the joint information environment. Refine the joint common systems function list to support JCIDS and system/service development. Analyze JCIDS capability requirements documents and architectures for integration, interoperability, performance, cost and schedule. Update the warfighter mission area (WMA) architecture development standards to meet emerging JCIDS process improvements. Provide architecture integration and federation to support the WMA enterprise architecture by populating the WMA architecture portal with all relevant and available Functional Capabilities Board portfolio areas of interest architecture content. Improve the WMA architecture portal for the Combatant Command, Services and DoD agencies by broadening access, integration, reusability and information sharing of architecture artifacts and data sets through federation and standardized information and data exchanges.</p> <p>Data and Services – continue to develop, promote, and integrate data and services requirements, standards, technical specifications, and policy to support improved warfighter interoperability and information sharing with joint, mission partners and other U.S. Government departments and agencies. Socialize and perform proof of concept activities of the NATO core data framework, to achieve coalition interoperability and demonstrate operational effectiveness. Continue to align and standardize emerging tactical data link and messaging standards with enterprise information sharing. Support the implementation of National Information Exchange Model (NIEM) as the common interoperability information exchange standard for new IT services. In coordination with the DoD CIO, implement IT enterprise service lifecycle management processes, procedures, and capabilities.</p> <p>Interoperability and Integration – lead mission partner environment (MPE) implementation and support cyber priorities across DoD by performing analysis, conducting assessments and supporting materiel developers. Review and monitor the continued development of the MPE information system to ensure it meets the operational requirements of the CCMDs and Services and complements the greater MPE initiative. Continue to shape NATO future mission networking implementation to ensure it remains aligned with MPE, including related capability development. Support development and maturation of DOD enterprise cyber-range environment and command and control information systems to support US and coalition cyber force readiness, cyber defense of coalition networks, integration, interoperability, and defensibility of mission partner environment federated networks.</p> <p><b>FY 2019 Plans:</b></p>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 002 / <i>C5 Capability Development</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<p>Capability Development – analyze and coordinate the Department’s FY 2021-2025 C2 integrated priority lists and capability gap assessment for JROC approval. Develop and coordinate annual Joint C2 FY 2020 and FY 2021 operational priorities for JROC approval. Provide operational input to capability development efforts focused on migration of Global Command and Control Systems (GCCS) to a loosely coupled enterprise accessible solution. Ensure warfighter demands for a functional denied-disconnected, intermittent, low-bandwidth capability at the Combined/Joint Task Force-level are adequately understood and addressed by the capability developer. Ensure capability needs are addressed for C2IE development and transition.</p> <p>Provide architecture and joint mission thread development and analysis efforts as required to support the Chairman's directed focus areas and Chief Information Officer (CIO) lines of operations. Provide architectures and analytical support as required to the Chairman's Joint Military Net Assessment. Conduct analysis and validate architectures and engineering designs for continued implementation of the joint information environment. Update the warfighter mission area (WMA) architecture development standards to improve WMA architecture portal usability. Continue to improve the quality of and expand the amount of the C4/ Cyber portfolio architecture information available on the WMA architecture portal. Conduct analyses and develop architectures and metrics for JCIDS capability requirement documents.</p> <p>Data and Services – develop, promote, and integrate warfighter data and services requirements, standards, technical specifications, and policy to improve warfighter interoperability and information sharing with joint, mission partners, and other U.S. government departments and agencies. Perform and lead proof of concept activities of the North Atlantic Treaty Organization (NATO) core data framework and the National Information Exchange Model (NIEM) with selected communities of interest, such as robotics and autonomous systems, to achieve coalition interoperability and demonstrate operational effectiveness for the mission partner environment and for the federated mission networking domain. Continue to align and standardize emerging tactical data link, symbology (including cyber symbology) and messaging standards with enterprise information sharing. Support and guide the maturation of and implementation of NIEM in the interagency, joint and coalition domains as the common enterprise level interoperability information exchange standard for new and updated IT services. In coordination with the DoD CIO, implement IT enterprise service management processes and procedures including lifecycle management, enterprise level capability integration and operational data management. Support joint command and control governance and requirements documents development to ensure data and service equities are properly represented on behalf of the warfighter.</p> <p>Integration and interoperability – lead mission partner environment (MPE) implementation and support cyber priorities across DoD by performing analysis, conducting assessments and supporting materiel developers. Review and monitor the continued development of the MPE information system to ensure it meets the operational requirements of the Combatant Commands and Services and complements the greater MPE initiative. Continue to shape NATO future mission networking implementation to ensure it remains aligned with MPE, including related capability development. Support development and maturation of</p>			



**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 002 / <i>C5 Capability Development</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
DOD enterprise cyber-range environment command and control information system to support US and coalition cyber force readiness, cyber defense of coalition networks, integration, interoperability, and defensibility of mission partner environment federated networks. Coordinate and lead non-overseas contingency operations-funded coalition interoperability events across the geographic Combatant Commands.  <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Decrease of \$803K due to the transfer of funding to Joint Fires project to support the Bold Quest multinational network enhancement which greatly increases Bold Quest distributed operations, both within CONUS and in Europe and Australia.			
<b>Accomplishments/Planned Programs Subtotals</b>	6.594	6.590	5.787

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

N/A

**Remarks**

**D. Acquisition Strategy**

Biannual review of C4/Cyber resources includes an examination of the current and future Budget/Spend Plan, Lines of Effort, and Acquisition Strategy.

The award of a Multi Award Contract (MAC) seeks efficiencies in the performance of requirements for C4/Cyber and Information services, and promotes contractor teaming to provide critical technical and management support. The MAC approach also seeks to reduce the costs of current contract support through the elimination of multiple fees for service contracts, and through the competitive award of contract services.

**E. Performance Metrics**

1. Secure JROC approval of the Global Command and Control System-Joint Enterprise (GCCS-JE) Information Systems Capability Development Document (IS-CDD) to guide development of DoD's primary situational awareness capability.
2. Secure JROC approval of the FY 2019 and FY 2020 joint C2 operational priorities defining C2 capability needs/gaps providing senior level oversight and direction to joint C2 capability development.
3. Secure DoD approval for seven JCIDS requirements documents to support materiel development of Joint C2, GCCS-JE, planning and execution, intelligence support to C2, global-theater security cooperation, readiness, and cross-functional information technology capabilities enabling timely delivery of materiel solutions to meet warfighter capability needs/gaps.

UNCLASSIFIED

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 002 / <i>C5 Capability Development</i>
<p>4. Ensure Joint C2 requirements development supports the DoD-directed better buying power by continuing the rapid development and fielding of virtualized C2 system capabilities to Combatant Commands and Services.</p> <p>5. Validate the architectures and engineering design specifications for 27 JIE and MPE projects.</p> <p>6. Conduct three National Information Exchange Model Military Operations Domain Configuration Control Board sessions to improve and increase information sharing via promulgation of one domain content update.</p> <p>7. Lead a minimum of six Enterprise Service and Data Panels with the goal to improve and increase the interoperability and reusability of DOD enterprise services and authoritative data sources.</p> <p>8. Include mission partnering concepts in four Combatant Command and Service exercises.</p> <p>9. Establish at least two new or enhanced information/sharing and collaboration areas NLT 30 Jun 19.</p> <p>10. Establish and refine processes and procedures to ensure FMN implementation is included in two NATO exercises.</p>		



**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2019 The Joint Staff</b>		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 002 / <i>C5 Capability Development</i>

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
<b>C5 Capability Development</b>																												
C5 Capability Development																												

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 002 / <i>C5 Capability Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>C5 Capability Development</b>				
C5 Capability Development	1	2019	4	2019

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments	<b>Project (Number/Name)</b> 003 / Joint Fires C2 Interoperability
--	--	---

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
003: Joint Fires C2 Interoperability	4.425	4.150	4.150	5.000	-	5.000	5.000	5.000	5.000	5.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Lead interoperability efforts across DoD and partner nations at the operational and tactical level for mission partner operations, fire support, combat identification (CID), and friendly force tracking (FFT) capabilities. Conduct joint fire support, joint close air support and CID-FFT action plans to fulfill CJCS-directed, General Officer/Flag Officer (GOFO) level responsibilities. Conduct Joint Fire Support Executive Steering Committee (JFS ESC) standardization team accreditation visits to U.S. and partner nation schoolhouses to ensure memorandum of agreement signatories are accomplishing schoolhouse training in compliance with the memoranda.

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

	FY 2017	FY 2018	FY 2019
<p><b>Title:</b> Joint Fires C2 Interoperability</p> <p><b>Description:</b> These efforts directly support Chairman, Joint Chiefs of Staff (CJCS) guidance to increase interoperability with allies and partners, to more effectively counter transregional threats. Supports Chairman's focus area of improving joint warfighting capability and the SECDEF's line of effort to stengthen alliances and attract new partners. Execute Joint Staff-sponsored Bold Quest systems-of-systems interoperability assessment, including integration of cyber capabilities with command and control of conventional and Special Operations Force missions from a multinational perspective at the tactical level. Lead the Joint Fire Support Executive Steering Committee (JFS ESC), composed of Flag/General Officer representatives and supporting staffs from the U.S. Services, Special Operations Command and 21 partner nations. Those nations include NATO nations, Australia, Republic of Korea and key Gulf State allies. Also lead the Combat Identification – Friendly Force Tracking Executive Steering Committee (CID-FFT ESC), focused on more effective and efficient combat operations and reduced potential for friendly fire incidents.</p> <p><b>FY 2018 Plans:</b> Plan and execute Joint Staff-sponsored Bold Quest 2018 systems-of-systems interoperability assessment, including integration of Cyber and ISR capabilities with command and control of conventional and Special Operations Force missions from a multinational perspective at the tactical level. These efforts directly support the National Military Strategy and other CJCS focus areas. Continue leading accreditation visits of current JFS ESC member programs and provided staff assistance for development of close air support-related training and certification programs.</p> <p><b>FY 2019 Plans:</b> Plan and execute Joint Staff-sponsored Bold Quest 2019 capability demonstration and assessment, focused on interoperability for joint and coalition fires. Bold Quest data and assessments inform US and Partner Nation investment in multiple capability</p>	4.150	4.150	5.000

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 003 / <i>Joint Fires C2 Interoperability</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<p>areas: combat identification, friendly force tracking, digitally aided close air support and fires, integrated air and missile defense, coalition intelligence surveillance and reconnaissance, and cyber. These efforts directly support the National Military Strategy, the CJCS' global integration objectives and the Combatant Commanders conventional and SOF international engagement programs. Continue leading accreditation visits of current JFS ESC member programs and provided staff assistance for development of close air support-related training and certification programs.</p> <p><b><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i></b> Increase of \$850K due to the Bold Quest multinational network enhancement which greatly increases Bold Quest distributed operations, both within CONUS and in Europe and Australia.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	4.150	4.150	5.000

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

N/A

**Remarks**

**D. Acquisition Strategy**

Biannual review of C4/Cyber resources includes an examination of the current and future Budget/Spend Plan, Lines of Effort and Acquisition Strategy.

The award of a Multi Award Contract (MAC) seeks efficiencies in the performance of requirements for C4/Cyber and Information services, and promotes contractor teaming to provide critical technical and management support. The MAC approach also seeks to reduce the costs of current contract support through the elimination of multiple fees for service contracts, and through the competitive award of contract services.

**E. Performance Metrics**

1. Lead development, demonstration and assessment of situational awareness and cooperative/non-cooperative identification capabilities that enable U.S. and NATO/Coalition warfighters to identify friendly, enemy, and neutral forces for "shoot/don't shoot" decisions.
2. Synchronize Service testing, acquisition and fielding of Mode 5 IFF capability, with focus on Full Operational Capability (FOC) in 2020. Monitor Service fielding progress of 169 platform types.
3. Lead the design, planning and execution of two Bold Quest coalition capability demonstrations and assessments in order to inform U.S. and partner nation investment in networked capabilities to improve the detection and engagement of targets via surface (ground and maritime) and air delivered fires and other non-kinetic means.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 003 / <i>Joint Fires C2 Interoperability</i>
<p>4. Lead the digitally aided close air support (DACAS) coordinated implementation initiative among all US Services, USSOCOM, and 16 partner nations; develop and document engineering change proposals' technical solutions to operational interoperability issues in the CAS mission area; maintain the associated equipment and currency of assessment tools software and licensing agreements.</p> <p>5. Lead US and partner nations with international fire support interoperability capability development initiatives, to ensure on-going efforts optimize: unity-of-effort; resource/cost benefit; and enhanced fire support integration.</p> <p>6. Expand digital call-for-fire solution development to include enhanced multi-national interoperability with 11 partner nations.</p> <p>7. Lead, coordinate, organize, and execute an annual Joint Fire Support Symposium to exchange information, identify issues, examine capability shortfalls, assess emerging technologies, and recommend areas for DoD action/resolution.</p> <p>8. Conduct accreditation assessments for 18 of 33 current signatory programs (11 Joint Terminal Attack Controller, 2 Forward Air Controller (Airborne), and 5 Joint Fires Observer).</p> <p>9. Lead development and refinement of four U.S. and NATO joint fires-related doctrine and tactics, techniques, and procedures publications.</p> <p>10. Plan and conduct quarterly Joint Fire Support and Combat ID-Friendly Force Tracking Executive Steering Committees and working group meetings to address identified shortfalls in those mission areas.</p>		



UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 The Joint Staff Date: February 2018

Appropriation/Budget Activity 0400 / 4 R-1 Program Element (Number/Name) PE 0604826J / Joint C5 Capability Development, Integration, and Interoperability Assessments Project (Number/Name) 003 / Joint Fires C2 Interoperability

Table with columns: Test and Evaluation (\$ in Millions), Cost Category Item, Contract Method & Type, Performing Activity & Location, Prior Years, Cost, Award Date, FY 2017, FY 2018, FY 2019 Base, FY 2019 OCO, FY 2019 Total, Cost To Complete, Total Cost, Target Value of Contract.

Remarks

**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2019 The Joint Staff</b>		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 003 / <i>Joint Fires C2 Interoperability</i>

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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

<b><i>Joint Fires C2 Interoperability</i></b>																												
Joint Fires C2 Interoperability																												

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604826J / <i>Joint C5 Capability Development, Integration, and Interoperability Assessments</i>	<b>Project (Number/Name)</b> 003 / <i>Joint Fires C2 Interoperability</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Joint Fires C2 Interoperability</i></b>				
Joint Fires C2 Interoperability	1	2019	4	2019

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification: PB 2019 The Joint Staff** **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 6: RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605126J <i>I Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</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
Total Program Element	310.130	32.744	36.581	52.565	-	52.565	56.162	58.042	61.601	66.601	Continuing	Continuing
P001: <i>Core</i>	134.240	9.014	9.343	9.967	-	9.967	12.407	12.351	11.610	11.610	Continuing	Continuing
P003: <i>Black Dart</i>	25.483	3.000	3.000	3.000	-	3.000	3.500	3.466	3.366	3.366	Continuing	Continuing
P004: <i>Joint Distributed Engineering Plant</i>	17.248	2.500	2.738	1.000	-	1.000	1.800	1.700	1.500	1.500	Continuing	Continuing
P005: <i>Nimble Fire</i>	69.539	12.230	16.000	14.000	-	14.000	13.800	12.850	12.650	12.650	Continuing	Continuing
P006: <i>Cruise Missile Combat Identification (CID)</i>	63.620	6.000	5.500	4.998	-	4.998	4.655	4.675	4.475	4.475	Continuing	Continuing
P007: <i>Homeland Defense Capability</i>	-	0.000	0.000	15.000	-	15.000	20.000	23.000	28.000	33.000	Continuing	Continuing
P008: <i>Joint Regional Integrated Air and Missile Defense Capability</i>	0.000	0.000	0.000	4.600	-	4.600	0.000	0.000	0.000	0.000	Continuing	Continuing

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

The Joint Integrated Air and Missile Defense Organization (JIAMDO) is the organization within the Department of Defense chartered to plan, coordinate, and oversee Integrated Air and Missile Defense (IAMD) requirements, joint operational concepts, and operational architectures. As part of the Joint Staff, JIAMDO supports the Chairman in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the operational community's proponent for requirements and capabilities in IAMD, and is the joint IAMD proponent within the DoD's resource allocation structures. JIAMDO also leads IAMD mission and utility analysis, integrates IAMD within the force protection joint capability area, conducts evaluations, demonstrations of joint IAMD architectures, and provides advocacy for innovative, technically mature, and affordable solutions.

JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains liaison offices at major CCMD locations to facilitate coordination of integration issues and requirements. In particular, JIAMDO maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of ballistic missile defense of the United States. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review cost, schedule, and performance criteria of Missile Defense Agency missile defense programs, and assesses the validity of those criteria in relation to national and military requirements. At the request of USSTRATCOM and at the direction of the CJCS, JIAMDO supports USSTRATCOM in the development of the IAMD prioritized capabilities list and the global integrated IAMD assessment and analysis of the Ballistic Missile Defense System. JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues and technical oversight of homeland capability solutions.

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 6: RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605126J <i>I Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>
--	---

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>
Previous President's Budget	38.059	36.581	36.469	-	36.469
Current President's Budget	32.744	36.581	52.565	-	52.565
Total Adjustments	-5.315	0.000	16.096	-	16.096
• Congressional General Reductions	-0.015	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Decrease for Historical Underexecution	-	-	-3.603	-	-3.603
• FY 2017 Request for Additional Appropriations Not Addressed	-5.300	-	-	-	-
• Increase for Homeland	-	-	15.000	-	15.000
• Internal Realignment from Procurement to RDT&E	-	-	0.099	-	0.099
• Increase for JRICM	-	-	4.600	-	4.600

**Change Summary Explanation**

FY 2017 Request for Additional Appropriations Not Addressed (\$5.3M).

JIAMDO Core (P001): In FY 2019, \$.1M was realigned from Procurement to Core to support higher priority requirements.

The FY 2019 funding request was reduced by \$1.8 million to account for the availability of prior year execution balances and rephased into FY 2020 and FY 2021.

JIAMDO-Black Dart (P003): The FY 2019 funding request was reduced by \$0.3 million to account for the availability of prior year execution balances and rephased into FY 2020 and FY 2021.

JIAMDO-Joint Distributed Engineering Plant (P004): The FY 2019 funding request was reduced by \$0.5 million to account for the availability of prior year execution balances and rephased into FY 2020 and FY 2021.

JIAMDO-Nimble Fire (P005): Increased funding for FY 2018 will be used to hold two large Nimble Fire events in support of U.S. Fleet Forces Command, USPACOM, USSTRATCOM and USEUCOM. Additionally, funds will be used to improve electronic warfare, multi-spectral environment, advanced capability

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 6: RDT&amp;E Management Support</i>	PE 0605126J <i>I Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>

model, and space warfare. The FY 2019 funding request was reduced by \$0.5 million to account for the availability of prior year execution balances and rephased into FY 2020 and FY 2021.

JIAMDO-Combat Identification (P006): The FY 2019 funding request was reduced by \$0.5 million to account for the availability of prior year execution balances and rephased into FY 2020 and FY 2021.

JIAMDO-Homeland Defense Capability (P007): Further details are reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Annual Report to Congress

JIAMDO-Joint Regional Integrated Air and Missile Defense Capability (P008): Was separated into a new project for transparency purposes. The program was increased by \$4.6 million in support of a critical follow-on Joint Regional IAMD Capability Mix (JRICM) II integrated and defense capability mix study.

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)	<b>Project (Number/Name)</b> P001 / Core
--	--	---

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
P001: Core	134.240	9.014	9.343	9.967	-	9.967	12.407	12.351	11.610	11.610	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Joint Integrated Air and Missile Defense Organization (JIAMDO) is the organization within the Department of Defense (DoD) chartered to plan, coordinate, and oversee joint Integrated Air and Missile Defense (IAMD) requirements, joint operational concepts, and operational architectures. As part of the Joint Staff, JIAMDO supports the Chairman of the Joint Chiefs of Staff in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the operational community's proponent for characteristics, requirements, and capabilities in IAMD, and is the joint IAMD proponent within the DoD's resource allocation structures. JIAMDO also leads IAMD mission area and utility analyses, integrates IAMD within the Force Protection joint capability area, and conducts evaluations and demonstrations of joint IAMD architectures and concepts.

JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains liaison offices at major CCMD locations to facilitate coordination of integration issues and requirements. In particular, JIAMDO maintains close coordination with USSTRATCOM and USNORTHCOM in support of ballistic missile defense of the United States. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review the cost, schedule, and performance criteria of Missile Defense Agency missile defense programs, and assesses the validity of those criteria in relation to national and military requirements. At the request of USSTRATCOM, and at the direction of the CJCS, JIAMDO supports USSTRATCOM in development of the IAMD Prioritized Capability List, the Global Integrated IAMD Assessment, and analysis of the Ballistic Missile Defense System (BMDS). JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues.

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

	FY 2017	FY 2018	FY 2019
<b>Title:</b> Core	9.014	9.343	9.967
<b>Description:</b> Provides staff support for JIAMDO operations in the area of ballistic missile defense, air and cruise missile defense, homeland defense, requirements management, combat identification, modeling & simulation, all other JIAMDO analytical functions and products, senior level briefings, and all travel costs for government and contractor support personnel (including Combatant Commander liaison personnel). This includes performing analyses, demonstrations, and programmatic assessments of technology, operations, requirements, and weapons systems. In coordination with Services and CCMDs, JIAMDO Core also funds the definition, assessment, development, and approval of Joint IAMD operational concepts, operational architectures, and capability requirements to guide the Department's joint/interagency/combined fully integrated and net-centric capable IAMD (including defense against cruise missiles, unmanned aerial vehicles, and ballistic missiles). JIAMDO Core also provides funding to:			



**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff	<b>Date:</b> February 2018
---	----------------------------

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / <i>Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>	<b>Project (Number/Name)</b> P001 / <i>Core</i>
--	---	--

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
---	----------------	----------------	----------------

<p>1. Develop and integrate joint studies, simulations, wargames, force resource allocation, and interoperability initiatives.</p> <p>2. Manage relevant Congressional interaction and CCMD interface through a cadre of liaisons collocated with major headquarters.</p> <p>3. Directly support and sponsor homeland air surveillance-related demonstration and analysis activities.</p> <p>4. Run the IAMD Working Group and co-chair the Protection Functional Capabilities Board focusing CCMD, Joint Staff, and Service collaboration efforts in generation of joint concepts and development of the IAMD architecture and roadmap.</p> <p>5. Develop U.S. positions for, and provide the U.S. head of delegation to, the NATO Air and Missile Defense Committee.</p> <p>JIAMDO Core enables strategic planning development, infrastructure, security, travel, and other support activities. Funding pays for: contracted Systems Engineering and Technical Assistance (SETA) support for Air &amp; Cruise Missile Defense (ACMD), Ballistic Missile Defense (BMD), Homeland Air Security (HAS) strategic planning, studies &amp; analysis, combat ID, modeling &amp; simulation, all other JIAMDO analytical functions and products, senior level briefings, and all travel costs for government and contractor support personnel (including Combatant Commander liaison personnel). Additionally, the JIAMDO Core budget funds daily on-site security management personnel to meet DoD, National Industrial Security Program Operating Manual (NISPOM), and other security regulations, for all administrative and support functions related to higher security classifications, as well as basic office supplies and furniture, and classified/unclassified data connections.</p> <p><b>FY 2018 Plans:</b> Continue performing Ballistic Missile Defense studies as directed by higher authority and provide contracted expertise in support of all JIAMDO analytical and requirements management activities. Continue DepSecDef high priority follow on assessment of non-kinetic and kinetic studies.</p> <p><b>FY 2019 Plans:</b> Performing Ballistic Missile Defense studies as directed by higher authority and provide contracted expertise in support of all JIAMDO analytical and requirements management activities. Execute DepSecDef directed tasking for non-kinetic and kinetic layered defense modeling. Continue support to Chairman’s Net Assessment, Joint Military Net Assessment and OSD Policy using analysis and study findings.</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b></p>			
--	--	--	--

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff	<b>Date:</b> February 2018
---	----------------------------

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / <i>Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>	<b>Project (Number/Name)</b> P001 / <i>Core</i>
--	---	--

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2017	FY 2018	FY 2019
Net increase between FY 2018 and FY 2019 due to a combination of internal realignment of funding to the Core for DepSecDef directed non-kinetic and kinetic studies, historical underexecution rephasing of funds into FY 2020 and FY 2021, and Major Headquarters Activities (MHA) reductions.			
<b>Accomplishments/Planned Programs Subtotals</b>	9.014	9.343	9.967

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

- (1) Support two major Nimble Fire exercises during FY 2019.
- (2) Conduct two IAMD Working Groups and at least one Functional Capabilities Board per month.
- (3) Conduct the annual Black Dart Counter-Unmanned Aerial System technology demonstration.
- (4) Support U.S. Representative to NATO Air Defense Council and Missile Defense Committee including two overseas meetings per year and numerous lower-level supporting functions.
- (5) Develop and maintain operational architecture compliance with DoD Architectural Framework (DODAF) standards.
- (6) Ensure 100% of all government employee travel is in accordance with the Joint Federal Travel Regulation/Joint Travel Regulation and all contractor travel is in accordance with applicable regulations.
- (7) Maintain all unclassified/classified LANs on a daily basis in accordance with the Joint Staff's Office of the Chief Information Officer guidance/policy.
- (8) Ensure all computers, NIPRNET/SIPRNET, are refreshed according to applicable policy/guidance.

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)	<b>Project (Number/Name)</b> P003 / Black Dart
--	--	---

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
P003: <i>Black Dart</i>	25.483	3.000	3.000	3.000	-	3.000	3.500	3.466	3.366	3.366	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Joint Integrated Air and Missile Defense Organization (JIAMDO) is the organization within the Department of Defense (DoD) chartered to plan, coordinate, and oversee Joint Integrated Air and Missile Defense (IAMD) requirements, joint operational concepts, and operational architectures. As part of the Joint Staff, JIAMDO supports the Chairman of the Joint Chiefs of Staff in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the operational community's proponent for characteristics, requirements, and capabilities in IAMD, and is the joint IAMD proponent within the DoD's resource allocation structures. JIAMDO also leads mission area and utility analyses for air and missile defense, integrates air and missile defense within the force protection joint capability area, and conducts evaluations and demonstrations of joint IAMD architectures and concepts.

JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains liaison offices at major CCMD locations to facilitate coordination of integration issues and requirements. In particular, JIAMDO maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of ballistic missile defense of the U.S. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review the cost, schedule, and performance criteria of Missile Defense Agency missile defense programs, and assesses the validity of those criteria in relation to national and military requirements. At the request of USSTRATCOM and at the direction of the CJCS, JIAMDO supports USSTRATCOM in development of the IAMD Prioritized Capability List, the Global Integrated Air and Missile Defense Assessment, and analysis of the Ballistic Missile Defense System (BMDS). JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues.

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

	FY 2017	FY 2018	FY 2019
<b>Title:</b> Black Dart Counter Unmanned Aircraft Systems Technology Demonstration	3.000	3.000	3.000
<p><b>Description:</b> Provides funding to support administration and execution of Black Dart demonstrations. Black Dart is a unique joint, interagency demonstration focusing on rapid development and implementation of Counter - Unmanned Aircraft Systems (C-UAS) technology from readily-available commercial and governmental products. Objectives include:</p> <ol style="list-style-type: none"> <li>1. Execute live-fly, live-fire C-UAS technology demonstration to assess and validate existing and emerging Integrated Air and Missile Defense (IAMD) capabilities.</li> <li>2. Present emerging solutions to inform requirements decision-making.</li> </ol>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / <i>Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>	<b>Project (Number/Name)</b> P003 / <i>Black Dart</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
3. Identify and develop IAMD operational concepts, system interoperability, and operational architectures for the C-UAS mission set.				
4. Advocate for warfighters' desired C-UAS capabilities and affordable, integrated solutions.				
<b>FY 2018 Plans:</b> Expand coalition partner participation and develop scenarios integrating systems across land, littoral, and maritime domains.				
<b>FY 2019 Plans:</b> Continue stakeholder participation utilizing scenarios which are integrating systems across land, littoral, and maritime domains at venues to include Urban and sea-based scenarios. Analyze and present results of Black Dart 18 to Joint Staff, Joint Requirements Oversight Council and stakeholders.				
<b>Accomplishments/Planned Programs Subtotals</b>		3.000	3.000	3.000
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A				
<b>Remarks</b>				
<b>D. Acquisition Strategy</b> N/A				
<b>E. Performance Metrics</b>				
1. Complete events within schedule and budget. Events provide useful data to improve C-UAS capability.				
2. Document gaps, develop and substantiate hardware, software, and employment concepts.				
3. Field C-UAS capability.				

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)				<b>Project (Number/Name)</b> P004 / Joint Distributed Engineering Plant			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
P004: Joint Distributed Engineering Plant	17.248	2.500	2.738	1.000	-	1.000	1.800	1.700	1.500	1.500	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Joint Integrated Air and Missile Defense Organization (JIAMDO) is the organization within the Department of Defense chartered to plan, coordinate, and oversee joint Integrated Air and Missile Defense (IAMD) requirements, joint operational concepts, and operational architectures. As part of the Joint Staff, JIAMDO supports the Chairman of the Joint Chiefs of Staff in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the operational community's proponent for characteristics, requirements, and capabilities in IAMD, and is the joint IAMD proponent within the DoD's resource allocation structures. JIAMDO also leads mission area and utility analyses for air and missile defense, integrates air and missile defense within the force protection joint capability area, and conducts evaluations and demonstrations of joint IAMD architectures and concepts.

JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains liaison offices at major CCMD locations to facilitate coordination of integration issues and requirements. In particular, JIAMDO maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of ballistic missile defense of the United States. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review the cost, schedule, and performance criteria of Missile Defense Agency missile defense programs, and assesses the validity of those criteria in relation to national and military requirements. At the request of USSTRATCOM and at the direction of the CJCS, JIAMDO supports USSTRATCOM in development of the IAMD Prioritized Capability List, the Global Integrated Air and Missile Defense Assessment, and analysis of the Ballistic Missile Defense System (BMDS). JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Joint Distributed Engineering Plant (JDEP)	2.500	2.738	1.000
<b>Description:</b> The JDEP is a tool for evaluating interoperability of developing or newly fielded systems; identifying interoperability deficiencies in existing systems; and verifying corrective actions in a controlled, repeatable environment through the use of hardware in the loop.			
<b>FY 2018 Plans:</b>			
Fund an appropriate joint distributed test event to assess the interoperability of joint IAMD weapons systems. Provide users the means to create family of systems environments by linking existing capabilities using hardware, software, and operator-in-			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / <i>Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>	<b>Project (Number/Name)</b> P004 / <i>Joint Distributed Engineering Plant</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<p>the-loop. Link existing Service and Joint combat system engineering and test sites via distributed communications. Reduce developmental cycle times by leveraging existing facilities.</p> <p><b>FY 2019 Plans:</b> Fund multiple, distributed test events to assess the interoperability of joint IAMD weapons systems with a focus on C-UAS capabilities to counter the emerging threat of Group 1 and 2 UAS. Continue to leverage live-fly data of the Black Dart technology demonstrations to develop scenarios that replicate the future operational environments. JDEP will continue to link existing Service and joint combat system engineering and test sites via distributed communications, as well as, reduce developmental cycle times by leveraging existing facilities and infrastructure.</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> A majority of the functions executed in this program have been absorbed under the Nimble Fire and Black Dart programs. In addition, funding was reduced because of MHA reductions and transfer of funds to the Core program for higher priority requirements.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	2.500	2.738	1.000

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

1. Each JDEP event develops measures of effectiveness (MOE) & measures of performance (MOP) based on an eighteen month test planning and event process.
2. Complete events within schedule and budget.
3. Events provide useful data to improve air missile defense interoperability, with implemented and recommended corrective changes.
4. Events must be linked to the current approved IAMD architecture, provide joint benefit, contribute to joint interoperability, and address IAMD capability gaps.

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)	<b>Project (Number/Name)</b> P005 / Nimble Fire
--	--	--

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
P005: <i>Nimble Fire</i>	69.539	12.230	16.000	14.000	-	14.000	13.800	12.850	12.650	12.650	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Joint Integrated Air and Missile Defense Organization (JIAMDO) is the organization within the Department of Defense (DoD) chartered to plan, coordinate, and oversee Joint Integrated Air and Missile Defense (IAMD) requirements, joint operational concepts, and operational architectures. As part of the Joint Staff, JIAMDO supports the Chairman of the Joint Chiefs of Staff in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the operational community's proponent for characteristics, requirements, and capabilities in IAMD, and is the joint IAMD proponent within the DoD's resource allocation structures. JIAMDO also leads AMD mission area and utility analyses, integrates air and missile defense within the Force Protection joint capability area, and conducts evaluations and demonstrations of joint IAMD architectures and concepts.

JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains liaison offices at major CCMD locations to facilitate coordination of integration issues and requirements. In particular, JIAMDO maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of ballistic missile defense of the United States. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review the cost, schedule, and performance criteria of Missile Defense Agency missile defense programs, and assesses the validity of those criteria in relation to national and military requirements. At the request of USSTRATCOM and at the direction of the CJCS, JIAMDO supports USSTRATCOM in development of the IAMD Prioritized Capability List, the Global Integrated Air and Missile Defense Assessment, and analysis of the Ballistic Missile Defense System (BMDS). JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues.

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

	FY 2017	FY 2018	FY 2019
<b>Title:</b> JIAMDO Nimble Fire	12.230	16.000	14.000
<b>Description:</b> Nimble Fire is the Department's only joint IAMD operator-in-the-loop modeling and simulation capability exploring the Chairman's top five critical joint IAMD capabilities: wide-area surveillance and engagement quality tracking, pre-launch interdiction, non-kinetic post-launch capabilities, ballistic missile discrimination, and increased weapons ranges and lethality. Nimble Fire events explore joint IAMD capabilities and concepts in the FYDP timeframe combining experienced operators from the tactical communities, virtual simulations accredited by the program offices, current and future advanced capabilities, an integrated air, ballistic and cruise missile threat, and informed scenarios from the Department's analytical agenda and CCMD operational plans. JIAMDO brings together stakeholders across the engineering, analytical, and tactical communities to conduct multiple events to assess Joint interoperability of Service and MDA programs of record, explore concepts of employment, inform tactics,			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / <i>Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>	<b>Project (Number/Name)</b> P005 / <i>Nimble Fire</i>

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

techniques and procedures and concepts of operation, provide insights that help shape CCMD integrated priorities and future operational plans, and inform senior leader acquisition and requirements decisions.

***FY 2018 Plans:***

Execute two large Nimble Fire events in support of U.S. Fleet Forces Command, USPACOM, USSTRATCOM and USEUCOM. Provide material support for two additional Service and/or program office events. Additionally, accomplish significant upgrades to the VWC environment and IAMD systems and capabilities:

1. Electronic Warfare improvements in coordination with USSTRATCOM, Joint Electronic Preparedness for Advanced Combat (JEPAC), the Services and Missile Defense Agency (MDA) to better model "red" and "blue" electronic attack and electronic protection. Conduct analysis of electronic attack impact on: (1) F-15 Eagle Passive-Active Warning Survivability Systems (EPAWSS); (2) F/A-18E Integrated Defensive Electronic Countermeasures (IDECM), Surface Electronic Warfare Improvement Program (SEWIP) for Aegis, basic electromagnetic interference effects, and foundation for representing GPS modeling.
2. Multi-spectral environment improvements include upgrading the simulation backbone and service models to better handle capabilities such as Infrared Search and Track sensors, kill chains, environmental effects such as rain and clouds, and higher-fidelity threat signatures.
3. Advanced capability model improvements include expanded integrated fire control concepts involving capabilities such as Naval Integrated Fire Control – Counter Air (NIFC-CA) and fighter-centric kill chains, incorporation of advanced sensor capabilities such as the new IAMD radar for Aegis, Link-16 network enhancements, future threat kill chains and capabilities, and directed energy. Additionally, integrate an Advanced Gun Weapon System model into the environment to explore tactical command and control challenges and contributions to the overall defense of critical assets.
4. Space Warfare – integrate higher fidelity representations of Overhead Persistent Infrared (OPIR) assets and national to tactical contributions to the tactical fight.
5. Non-program of record experimentation of innovative uses of existing sensors and weapons across traditional IAMD assets. Examples include: ground-based sensors providing fire-control quality tracking to tactical air assets; contributions of unmanned assets to the air picture; and joint engagement sequences.

FY 2017	FY 2018	FY 2019



**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / <i>Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>	<b>Project (Number/Name)</b> P005 / <i>Nimble Fire</i>

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

	FY 2017	FY 2018	FY 2019
<p>6. Explore integration of offensive and defensive capabilities (kinetic and non-kinetic) in protection of select critical assets in USEUCOM.</p> <p><b>FY 2019 Plans:</b> Execute two Nimble Fire events in support of PACOM, STRATCOM, EUCOM, and MDA. Provide material support for two additional Service and/or program office events including Joint Counter-Air Integration (JCI) Joint Test. Additionally, accomplish significant upgrades to the Virtual Warfare Center environment and IAMD systems and capabilities:</p> <ol style="list-style-type: none"> <li>1. Electronic Warfare improvements in coordination with USSTRATCOM, Joint Electronic Preparedness for Advanced Combat (JEPAC), the Services and Missile Defense Agency to better model "red" and "blue" electronic attack and electronic protection. Conduct analysis of electronic attack impact on: (1) F-15 Eagle Passive-Active Warning Survivability Systems (EPAWSS); (2) F/A-18E Integrated Defensive Electronic Countermeasures (IDECM), Surface Electronic Warfare Improvement Program (SEWIP) for Aegis, basic electromagnetic interference effects, and foundation for representing GPS modeling.</li> <li>2. Multi-spectral environment improvements include upgrading the simulation backbone and service models to better handle capabilities such as Infrared Search and Track sensors, kill chains, environmental effects such as rain and clouds, and higher-fidelity threat signatures.</li> <li>3. Advanced Capability Model improvements include expanded integrated fire control concepts involving capabilities such as Naval Integrated Fire Control – Counter Air (NIFC-CA) and fighter-centric kill chains, incorporation of advanced sensor capabilities such as the new Air and Missile Defense Radar (AMDR) for Aegis, Link-16 network enhancements, future threat kill chains and capabilities, and directed energy.</li> <li>4. Space Warfare – integrate higher fidelity representations of Overhead Persistent Infrared (OPIR) assets and national to tactical (N2T) contributions to the tactical fight.</li> <li>5. Non-program of record experimentation of innovative uses of existing sensors and weapons across traditional IAMD assets. Examples include: ground-based sensors providing fire-control quality tracking to tactical air assets; contributions of unmanned assets to the air picture; and joint engagement sequences.</li> </ol> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b></p>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / <i>Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>	<b>Project (Number/Name)</b> P005 / <i>Nimble Fire</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
A funding increase for FY 2018 and FY 2019 was provided over baseline funding during FY 2018 to enhance electronic warfare modeling and simulation at the Virtual Warfare Center. The amount of the increase in FY 2019 (\$2M) was less than the increase in FY 2018 (\$4M), resulting in an apparent funding decrease from FY 2018 to FY 2019.			
<b>Accomplishments/Planned Programs Subtotals</b>	12.230	16.000	14.000

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

1. Complete events within schedule and budget.
2. Document gaps and shortfalls.
3. Inform the Joint Capabilities Board (JCB) on results and findings.
4. Specific details are classified.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)				<b>Project (Number/Name)</b> P006 / Cruise Missile Combat Identification (CID)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
P006: Cruise Missile Combat Identification (CID)	63.620	6.000	5.500	4.998	-	4.998	4.655	4.675	4.475	4.475	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Joint Integrated Air and Missile Defense Organization (JIAMDO) is the organization within the Department of Defense (DoD) chartered to plan, coordinate, and oversee Joint Integrated Air and Missile Defense (IAMD) requirements, joint operational concepts, and operational architectures. As part of the Joint Staff, JIAMDO supports the Chairman of the Joint Chiefs of Staff in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the operational community's proponent for characteristics, requirements, and capabilities in IAMD, and is the joint IAMD proponent within the DoD's resource allocation structures. JIAMDO also leads AMD mission area and utility analyses, integrates air and missile defense within the Force Protection joint capability area, and conducts evaluations and demonstrations of joint IAMD architectures and concepts.

JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains liaison offices at major CCMD locations to facilitate coordination of integration issues and requirements. In particular, JIAMDO maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of ballistic missile defense of the U.S. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review the cost, schedule, and performance criteria of Missile Defense Agency missile defense programs, and assesses the validity of those criteria in relation to national and military requirements. At the request of USSTRATCOM and at the direction of the CJCS, JIAMDO supports USSTRATCOM in development of the IAMD Prioritized Capability List, the Global Integrated Air and Missile Defense Assessment, and analysis of the Ballistic Missile Defense System (BMDS). JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Cruise Missile Combat Identification (CID)	6.000	5.500	4.998
<b>Description:</b> Establishes joint requirements for emerging national and tactical combat identification technology and positions it for fielding to frontline weapon systems and the warfighter. Monitors, assesses, and enhances current joint air and cruise missile defense combat ID programs.			
<b>FY 2018 Plans:</b> Details of this program are classified and will be provided under a separate cover.			
<b>FY 2019 Plans:</b>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / <i>Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>	<b>Project (Number/Name)</b> P006 / <i>Cruise Missile Combat Identification (CID)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
Details of this program are classified and will be provided under a separate cover.			
<b><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i></b> No significant change in funding.			
<b>Accomplishments/Planned Programs Subtotals</b>	6.000	5.500	4.998

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

Details of this program are classified.

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)	<b>Project (Number/Name)</b> P007 / Homeland Defense Capability
--	--	--

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
P007: Homeland Defense Capability	-	0.000	0.000	15.000	-	15.000	20.000	23.000	28.000	33.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

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

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

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

	FY 2017	FY 2018	FY 2019
<b>Title:</b> Homeland Defense Capability	0.000	-	15.000
<b>Description:</b> Develop Homeland Defense Capability			
<b>FY 2019 Plans:</b> Perform technology development efforts. Further details are reported in accordance with with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.			
<b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> JIAMDO tasked with management of project to develop additional homeland defense capabilities. Further details are reported in accordance with with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	-	15.000

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0605126J / Joint Integrated Air & Missile Defense Organization (JIAMDO)			<b>Project (Number/Name)</b> P008 / Joint Regional Integrated Air and Missile Defense Capability				
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
P008: Joint Regional Integrated Air and Missile Defense Capability	0.000	0.000	0.000	4.600	-	4.600	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Joint Integrated Air and Missile Defense Organization (JIAMDO) is the organization within the Department of Defense (DoD) chartered to plan, coordinate, and oversee Joint Integrated Air and Missile Defense (IAMD) requirements, joint operational concepts, and operational architectures. As part of the Joint Staff, JIAMDO supports the Chairman of the Joint Chiefs of Staff in meeting his Title 10 responsibilities as they relate to IAMD issues. JIAMDO is the operational community's proponent for characteristics, requirements, and capabilities in IAMD, and is the joint IAMD proponent within the DoD's resource allocation structures. JIAMDO also leads mission area and utility analyses for air and missile defense, integrates air and missile defense within the force protection joint capability area, and conducts evaluations and demonstrations of joint IAMD architectures and concepts.

JIAMDO has established a close partnership with Combatant Commands (CCMDs) and maintains liaison offices at major CCMD locations to facilitate coordination of integration issues and requirements. In particular, JIAMDO maintains close coordination with U.S. Strategic Command (USSTRATCOM) and U.S. Northern Command (USNORTHCOM) in support of ballistic missile defense of the U.S. JIAMDO provides the CJCS and the Joint Requirements Oversight Council the ability to meet statutory responsibilities to review the cost, schedule, and performance criteria of Missile Defense Agency missile defense programs, and assesses the validity of those criteria in relation to national and military requirements. At the request of USSTRATCOM and at the direction of the CJCS, JIAMDO supports USSTRATCOM in development of the IAMD Prioritized Capability List, the Global Integrated Air and Missile Defense Assessment, and analysis of the Ballistic Missile Defense System (BMDS). JIAMDO supports the USSTRATCOM ballistic missile early warning mission by ensuring operational and technical requirements are integrated into the theater missile warning architecture. JIAMDO also provides direct support to North American Aerospace Defense Command and USNORTHCOM for homeland air and cruise missile surveillance issues.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Joint Regional Integrated Air and Defense Capability Mix (JRICM)	-	-	4.600
<b>Description:</b> Joint Regional Integrated Air and Defense Capability Mix (JRICM) will use analysis of adversary ballistic and cruise missile capabilities to determine if a layered missile defense can successfully degrade or defeat adversary missile attacks to extend base defense duration and maintain aircraft sortie generations rates. Funding will enable the study to proceed with support from the various government organizations and FFRDCs. Organizations will be funded to develop detailed analysis using modeling and simulation to study and evaluate attack operations, as well as defense capabilities in the 2023 timeframe.			
<b>FY 2019 Plans:</b>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0605126J / <i>Joint Integrated Air &amp; Missile Defense Organization (JIAMDO)</i>	<b>Project (Number/Name)</b> P008 / <i>Joint Regional Integrated Air and Missile Defense Capability</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
Conduct studies and analysis on air and missile defense capability mix. Deliveries will include briefings summarizing the impact that layered defense capabilities have on extending defense durations and aircraft sortie generation rate. Specific details are classified and can be provided upon request.				
<b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Study funding approved based on current threat environment.				
<b>Accomplishments/Planned Programs Subtotals</b>		-	-	4.600
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A				
<b>Remarks</b>				
<b>D. Acquisition Strategy</b> N/A				
<b>E. Performance Metrics</b> Specific details are classified and can be provided upon request.				

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED



**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 6:</i> <i>RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0204571J <i>I Joint Staff Analytical Support</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
Total Program Element	10.393	5.462	7.712	6.658	-	6.658	4.959	4.959	4.957	4.957	Continuing	Continuing
P001: <i>Future Joint Force Development</i>	10.393	3.562	5.712	5.301	-	5.301	4.959	4.959	4.957	4.957	Continuing	Continuing
P003: <i>GFM DI Enterprise Force Structure (EFS) Integration</i>	0.000	1.900	2.000	1.357	-	1.357	0.000	0.000	0.000	0.000	Continuing	Continuing

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

The Joint Staff Analytical Support (JSAS) family of programs provides defense analytical support capabilities for the Joint Staff and Combatant Commands (CCMDs). JSAS encompasses the developmental tools and infrastructure required to conduct analyses and formulate results to best assist the Chairman in fulfilling his statutory responsibilities. Key deliverables provided by JSAS include development and implementation of Joint Concepts, wide-ranging force structure assessments, course of action development for the joint force environment, analyses and studies to aid in decision-making, and other analysis efforts to implement timely, low-cost joint force development initiatives.

<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019 Base</u>	<u>FY 2019 OCO</u>	<u>FY 2019 Total</u>
Previous President's Budget	7.464	7.712	6.870	-	6.870
Current President's Budget	5.462	7.712	6.658	-	6.658
Total Adjustments	-2.002	0.000	-0.212	-	-0.212
• Congressional General Reductions	-2.002	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Revised economic assumptions	-	-	-0.212	-	-0.212

**Change Summary Explanation**

FY 2017: Decrease in funding due to \$2,000K Congressional mark to Joint Staff Analytical Support and a \$2K undistributed Congressional mark to FFRDC. Total mark (\$2,002K)

FY 2018: Increase in funding to P003 GFM DI to complete development and fielding of Joint Planning Services pilot that is fully integrated with Joint Planning and Execution Services framework.

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> / BA 6: <i>RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0204571J / <i>Joint Staff Analytical Support</i>	
FY 2019 thru FY 2022: Decrease in funding for FY 2019 thru FY 2022 is a result of (1) mandated 25% Major Headquarters Activities (MHA) reductions prescribed by the 2016 NDAA and (2) changes in economic assumptions for non-fuel and non-pay inflation.		

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0204571J / <i>Joint Staff Analytical Support</i>				<b>Project (Number/Name)</b> P001 / <i>Future Joint Force Development</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
P001: <i>Future Joint Force Development</i>	10.393	3.562	5.712	5.301	-	5.301	4.959	4.959	4.957	4.957	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Joint Staff Analytical Support (JSAS) program supports the Chairman of the Joint Chiefs of Staff Title 10, Section 153 statutory responsibilities for the analytical support, management, development, evaluation, and implementation of joint concepts in order to advance the operational effectiveness of the future Joint Force and enable the introduction of new capabilities. The Joint Concepts program supports the Chairman's statutory responsibility to provide "best military advice" to the SECDEF and POTUS by expressing his vision for the future joint force; addressing operational problems on a 20 year horizon; identifying joint force development implications; and identifying capabilities required to mitigate and solve future joint warfighting gaps. The overarching goal is to enable investment decisions between near and far term. Concepts drive horizontal integration for force development across the Services, Combatant Commands, Defense agencies, OSD and Joint Staff. An intent of the Joint Concepts program is to support senior leader decisions in balancing today's requirements and future force requirements. Key deliverables include:

Capstone Concept for Joint Operations (CCJO) that provides the Chairman's vision for the future joint operations and establishes aim points for the development of the future Joint Force. The key theme is globally integrated operations.

Family of Joint Concepts, based on National Military Strategy (NMS), provides operational approaches to future challenges or opportunities with respect to Russia, China, Iran, North Korea, and Countering Violent Extremist Organizations in order to guide current and future Joint Force development.

Joint Concept Transition Plans, developed for each joint concept, document approaches for Doctrine, Organization, Training, Material, Leadership, Personnel and Facilities (DOTMLPF) changes in the future Joint Force and identifies conceptual ideas that may require further exploration.

Joint Operating Environment (JOE) describes the future security environment and projects the implications of change for the Joint Force so it can anticipate and prepare for potential conflicts. The JOE articulates the circumstances that are likely to alter the security environment and explores how the intersection and interaction of these changes might impact the character of war in the future. Finally, the JOE provides a framework to think about the full range of Joint Force missions and how they may evolve over time.

The International Force Development Division's (IFDD) mission is to ensure collaboration and integration throughout the spectrum of joint force development, so that both the Joint Staff and its Allies and partners invest in any required reforms to ensure continued, interoperable and seamless operations together to meet the objectives in the NMS. The Multinational Capability Development Campaign (MCDC) is an initiative led by the United States Joint Staff which partners with 22 countries and international organizations designed to develop and assess non-materiel force development solutions and close capability gaps in multinational operations. Funds are used solely for travel in support of U.S. led projects and events with multinational and coalition partners.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff	<b>Date:</b> February 2018
---	----------------------------

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0204571J / <i>Joint Staff Analytical Support</i>	<b>Project (Number/Name)</b> P001 / <i>Future Joint Force Development</i>
--	---	--

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<p><b>Title:</b> Future Joint Force Development</p> <p><b>Description:</b> Current efforts focus on updating the Capstone Concept for Joint Operations (CCJO) so it extends the strategic approach developed in the 2016 NMS out to 2035. The CCJO modification will provide a common view of the future operating environment and a vision for how the future joint force will conduct globally integrated operations. Also, the revised CCJO will identify force development implications and required capabilities to maintain U.S. competitive advantage against emerging threats out to 2035. In partnership with selected Combatant Commands and the Services, development of the Joint Operating Concepts to address strategic challenges has begun. The Joint Operating Concept (JOC) – China and JOC - Russia prospectuses have been approved. The Director Joint Staff has endorsed the framework and authorized the continued development of two JOCs. The initial research on JOC – North Korea has begun and the prospectus is expected to be approved in early FY 2018. The concept prospectus describes the compelling military challenge and how it will be addressed in the future. JOC – Iran is in the very early stages of prospectus development. Study of the 2035 operating environment continues and informs understanding of military challenges associated with the common view of the future operating environment. Work with Five Eyes (FVEY) countries is focused on developing a FVEY common view of the future operating environment. Development support was completed for the Joint Concept for Integrated Campaigning and the Joint Concept for Operating in the Information Environment. Concept implementation is underway for the Joint Concepts for rapid aggregation, robotic and autonomous systems, human aspects of military operations, access and maneuver in the global commons, preventing the transfer and use of weapons of mass Destruction, and operational contract support.</p> <p><b>FY 2018 Plans:</b> Execute the Chairman's Joint Concept Program. Continue support for the NMS and execution of senior leader direction to develop a Capstone Concept for Joint Operations. In partnership with selected CCMDs, the Services and other Joint Staff directorates, obtain Vice CJCS approval of the JOC for China and Russia. Begin final official staffing of JOC – North Korea and complete the prospectus and initial draft of JOC – Iran. Support the development of JOC – Counter Violent Extremist Organizations. Continue futures study to inform our understanding of the challenges of the future operating environment. Continue implementing approved Joint Concepts in accordance with CJCS Instruction 3010. Continue multinational partnerships in futures and concept development. Continue integrating Joint Concepts across the Joint Staff to inform DOTMLPF capability development decisions.</p> <p><b>FY 2019 Plans:</b> Execute the Chairman's Joint Concept program. In partnership with CCMDs, the Services and other Joint Staff directorates, obtain Vice CJCS approval of the Joint Operating Concepts for North Korea and Iran. Provide support to U.S. Special Operations Command to develop transition plan of JOC – Counter Violent Extremist Organizations. Continue futures study to inform our understanding of the challenges of the future operating environment. Continue implementing approved Joint Concepts as described in CJCS Instruction 3010. Maintain and enhance multinational partnerships in concept development. Integrate Joint Concepts across the Joint Staff to inform DOTMLPF capability development decisions.</p>	3.562	5.712	5.301

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff	<b>Date:</b> February 2018
---	----------------------------

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0204571J / <i>Joint Staff Analytical Support</i>	<b>Project (Number/Name)</b> P001 / <i>Future Joint Force Development</i>
--	---	--

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2017	FY 2018	FY 2019
<p>Major events and projects in 2019 will include the International Concept Development and Experimentation Conference, a U.S. / NATO co-led event that is the annual forum of Supreme Allied Command Transformation and Joint Staff to provide a unique opportunity for the international concept development and experimentation community and stakeholders to discuss the most current issues of concept development and experimentation in the capability development process. Additional projects and events include travel to the MCDC Executive Steering Group (ESG) and National Directors' meetings to provide governance for the MCDC program as well as travel in support of U.S. led projects in the areas of logistics, personnel recovery, cyber, command and control and information sharing.</p> <p><b><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i></b> Decrease in funding for FY 2019 thru FY 2022 is a result of mandated 25% Major Headquarters Activities (MHA) reductions prescribed by the 2016 NDAA.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	3.562	5.712	5.301

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

Concept development performance metrics are derived from the Chairman's Title 10 responsibilities and guidance for developing and implementing Joint Concepts. These measures and metrics inform the Department's senior leadership by providing an azimuth for future joint force development.

Performance measure 1 – Joint Concepts were developed to examine military challenges and propose innovative joint solutions and associated capabilities in support of defense needs and priorities.

Metric: Joint Concepts align and inform the National Military Strategy, informed by rigorous futures analysis. The Joint Concepts Program resulted in relevant and timely advocacy among operations, plans, and force development communities.

Performance measure 2 – Joint Staff provided leadership for the development of Joint Concepts in collaboration with joint and multinational partners.

Metric: Joint Concepts governance system promote "best military advice" for the CJCS. Ideas and solutions are rigorously and objectively evaluated within a joint and multinational context. Joint concepts are continually monitored to ensure consistency, relevancy, and utility throughout their life cycle.

Performance measure 3 – Implement Joint Concepts.

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>	<b>Project (Number/Name)</b>
0400 / 6	PE 0204571J / <i>Joint Staff Analytical Support</i>	P001 / <i>Future Joint Force Development</i>

Metric: Transition plans promote informed decisions for joint force development that leverage, integrate or inform related DOTMLPF capability development programs for maximum efficiency and effectiveness.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0204571J / Joint Staff Analytical Support				<b>Project (Number/Name)</b> P003 / GFM DI Enterprise Force Structure (EFS) Integration			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
P003: GFM DI Enterprise Force Structure (EFS) Integration	0.000	1.900	2.000	1.357	-	1.357	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Global Force Management Data Initiative (GFM DI) Enterprise Force Structure (EFS) integration effort provides the next steps for GFM mission application enhancements required to balance global force demand against available military force. This complex and multi-variant task requires modernized technologies that provide integrated information linking authoritative force structure data (derived from the GFM DI Organizational Servers) to C2 data (resident in GFM mission applications). The Joint Staff Operations Directorate is responsible for GFM allocation and is the functional manager of the GFM mission applications. Accordingly, the Joint Staff will employ a strategy for efficiently fulfilling Enterprise Force Structure (EFS) data utility.

The DoD must quickly transition from legacy force management systems that promulgate data disparity across the Defense enterprise in order to meet national military objectives that have evolved from large force scenarios to operations that include small-to-full scale activities. As stated in both the NSS and NMS, our adversaries demonstrate the ability to readily transition from non-kinetic to kinetic means. Consequently, Information Technology (IT) superiority, capabilities, and recognition of associated vulnerabilities are an operational imperative. Yet, warfighters, strategic planners and GFM decision makers are unable to exchange information in a manner that keeps pace with globally changing threats to rapidly and accurately accomplish force sourcing activities to support SecDef allocation decisions. The Joint Staff is mandated to utilize the Service's Organizational Server EFS data to enhance managing, assessing, and displaying the worldwide disposition of U.S. Forces. Key deliverables include incrementally developed, operationally realistic capability enhancements focused on resource-informed planning and GFM sourcing functionality required by JROCMs, the Capability Development Document (CDD) for GFM DI; Joint Command and Control (JC2) Capability Definition Package (CDP); Joint Operation Planning Process (JOPP) and Assessment CDP; and Force Planning & Deployment Planning/Execution CDP.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> GFM Data Initiative (GFM DI) Enterprise Force Structure Integration (EFS)	1.900	2.000	1.357
<b>Description:</b> The GFM DI EFS integration effort requires RDT&E funds to upgrade GFM mission applications in order to operationalize force structure data from the Service's Organizational Servers to actual forces for employment within the purview of allocation and Joint command and control. This GFM DI effort within the Joint Staff Analytical Support (JSAS) family of programs will immediately streamline the SECDEFs "Forces for Unified Commands" memorandum Assignment Tables. RDT&E efforts for assignment and apportionment functions ended in FY 2015 with the declaration of Full Operation Capability (FOC) for the Automated Global Force Management Tool. GFM DI planned milestones must be met to enable a global visibility capability. GFM applications managed by the Joint Staff are used by the JSAS family of programs. This effort to fund critical upgrades is a precondition to GFM DI EFS integration.			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0204571J / <i>Joint Staff Analytical Support</i>	<b>Project (Number/Name)</b> P003 / <i>GFM DI Enterprise Force Structure (EFS) Integration</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<p><b><i>FY 2018 Plans:</i></b> RDT&amp;E work will focus on the continued incremental development of the Joint Force Capabilities Catalog (JFCC) to operationalize the GFM DI by linking DoD Service force structure to dynamic GFM factors (capabilities, readiness, availability, employment and location) within the Global Laydown Server (GLS). This capability will provide a dynamic representation of military force disposition. GLS algorithms will enable the GFM mission applications to present meaningful information required for timely and accurate decision making to assist the Chairman in providing military advice. The JFCC will serve as a user interface that uses the GLS algorithms to streamline operations planning and GFM execution in support of Combatant Commander requirements.</p> <p>The FY 2018 strategy will focus on a unit type capabilities registration functionality within the JFCC that will unify the unit-based readiness and unit type reporting process by obtaining on-hand forces (personnel and equipment) via the EFS (GFM DI) standard format. The FY 2018 incremental development of the JFCC virtual application and associated dynamic force visibility will provide the true inventory of force availability based on Service employable entities (unit types) and sustainability factors, to enable the use of on-hand Service force capabilities identified down to the Service-defined lowest deployable entities for executive decision making and GFM mission execution.</p> <p><b><i>FY 2019 Plans:</i></b> FY 2019 work will focus on efforts to implement timely, low-cost initiatives and Global Force Management (GFM) focused tools delivering a global visibility of the disposition of DoD forces. This supports the preferred munitions and engineering and cross-servicing arrangements.</p> <p><b><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i></b> This program recieved an increase of \$1.4M in both FY 2018 and FY 2019 to fund modification of GFM to interface with Joint Planning and Execution Services applications. Before the increase, the program was funded at \$0.6M in FY 2018 and \$0 in FY 2019. The resulting funding profile is \$2.0M in FY 2018 and \$1.4M in FY 2019. Also, this program received a \$.04M reduction due to changes in economic assumptions for non-fuel and non-pay inflation.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	1.900	2.000	1.357

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A



UNCLASSIFIED

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0204571J / <i>Joint Staff Analytical Support</i>	<b>Project (Number/Name)</b> P003 / <i>GFM DI Enterprise Force Structure (EFS) Integration</i>

**E. Performance Metrics**

The JSAS efforts will result in a Global Laydown Server and Joint Force Capabilities Catalog that supports a global visibility capability allowing for joint future force integration with information requirements needed to support timely and dynamic response to Combatant Commanders' unforeseen contingency requirements. This is a cost-effective yet full spectrum approach to support and assist the Chairman in fulfilling his statutory responsibilities while improving current and future joint force management. Program measures include the following:

1. Meet IOC that enables rapid generation of Global Force Management (GFM) decision-making information for policy-makers and Combatant Commands based on authoritative Service force capability, readiness, availability and current employment data.
2. Reduce the manual process of assembling capability, readiness, availability, employment as the first step to providing enhanced force management decision-making. Mining this data is currently a labor-intensive, time-consuming process and significantly impedes rapid response capabilities.
3. Services, CCMDs, Joint Staff and OSD will be able to efficiently collect and analyze force generation data supporting GFM in far less time than the current process, and with an authoritative common view of the sourcing-to-employment tracking of forces.
4. The JFCC will enable the rapid generation of information when making time-sensitive decisions and allow a joint planner to use standard and consistent force structure data in the GFM sourcing solution generation and deployment planning, execution, and distribution processes.
5. Ability to meet the VCJCS guidance to meet the GFM DI Full Operating Capability (FOC) by FY 2020.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>											
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide / BA 6: RDT&amp;E Management Support</i>	PE 0303166J / <i>Support to Information Operations (IO) Capabilities</i>											
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	34.279	0.857	0.673	0.652	-	0.652	0.650	0.754	0.754	0.754	Continuing	Continuing
001: <i>Joint Information Operations Range</i>	34.279	0.857	0.673	0.652	-	0.652	0.650	0.754	0.754	0.754	Continuing	Continuing

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

The Joint Information Operations Range (JIOR) provides DoD with a closed-loop, persistent, geographically distributed network to support Combatant Command (CCMD), Service, and other government agencies (C/S/A) training, testing, and experimentation within threat representative environments with realistic and relevant targets and command and control systems of interest. JIOR provides C/S/A's and key allied partners the ability to test deployment and collaboratively gain insights into advanced cyberspace and Electronic Warfare (EW) capabilities under current and future operational environments. JIOR integrates available cyberspace ranges with the training/test audience providing access to low density/high demand test and training resources including critical infrastructure, cyber targets, internet traffic, and opposing forces. JIOR supports Presidential policy and CJCS mandates for training, certification, and recertification of 6000+ cyber mission forces and DoD/Interagency cyber vulnerability assessments. The JIOR security construct allows users to develop, test, and secure their military capabilities and protect their identity and capabilities during range activities. C/S/A's conduct hundreds of mission rehearsal, training, testing, and experimentation events on the JIOR annually many of which take place simultaneously via secure virtual local area networks engineered and provided by JIOR.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>
Previous President's Budget	0.857	0.673	0.673	-	0.673
Current President's Budget	0.857	0.673	0.652	-	0.652
Total Adjustments	0.000	0.000	-0.021	-	-0.021
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Revised economic assumption	-	-	-0.021	-	-0.021

**Change Summary Explanation**

FY 2019 - 2023: Reflects changes in economic assumptions for non-fuel and non-pay inflation.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0303166J / Support to Information Operations (IO) Capabilities					<b>Project (Number/Name)</b> 001 / Joint Information Operations Range		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
001: Joint Information Operations Range	34.279	0.857	0.673	0.652	-	0.652	0.650	0.754	0.754	0.754	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Joint Information Operations Range (JIOR) provides DoD with a closed-loop, persistent, geographically distributed network to support Combatant Command (CCMD), Service, and other government agencies (C/S/A) training, testing, and experimentation within threat representative environments with realistic and relevant targets and command and control systems of interest. JIOR provides C/S/A's and key allied partners the ability to test deployment and collaboratively gain insights into advanced cyberspace and Electronic Warfare (EW) capabilities under current and future operational environments. JIOR integrates available cyberspace ranges with the training/test audience providing access to low density/high demand test and training resources including critical infrastructure, cyber targets, internet traffic, and opposing forces. JIOR supports Presidential policy and CJCS mandates for training, certification, and recertification of 6000+ cyber mission forces and DoD/Interagency cyber vulnerability assessments. The JIOR security construct allows users to develop, test, and secure their military capabilities and protect their identity and capabilities during range activities. C/S/A's conduct hundreds of mission rehearsal, training, testing, and experimentation events on the JIOR annually many of which take place simultaneously via secure virtual local area networks engineered and provided by JIOR.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Joint Information Operations Range	0.857	0.673	0.652
<p><b>Description:</b> The Joint Information Operations Range (JIOR) is a closed-loop network that forms a live-fire, distributed range utilizing encrypted tunneling to conduct training, testing, and experimentation in a threat representative environment to support Cyberspace and Electronic Warfare mission areas. This project is 100 percent cyber.</p> <p><b>FY 2018 Plans:</b> Evaluate network automation tools (for potential deployment) to better manage the JIOR, increase JIOR cybersecurity, and reduce integration time prior to executing test and training periods.</p> <p>Evaluate four specific hardware/software courses of action, including multiprotocol label switching for potential future technology insertion on the JIOR network.</p> <p><b>FY 2019 Plans:</b> Operationally test and evaluate selected JIOR network modernization courses of action.</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b></p>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0303166J / <i>Support to Information Operations (IO) Capabilities</i>	<b>Project (Number/Name)</b> 001 / <i>Joint Information Operations Range</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
Revised economic assumption for non-fuel and non-pay inflation.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.857	0.673	0.652

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

The metrics below reflect JIOR research and development goals to test newly available hardware and software (including automation software) that supports selection of a modernized network architecture for the future JIOR.

1. Reduction in network configuration/reconfiguration time for use/reuse of DoD designated cyber ranges and available capability providers due to JIOR modernization and technology insertion.
2. Estimated man-hours saved due to transforming manual integration of ranges, capability providers and users to automated integration.
3. Sufficient capacity & agility to support Cyber Mission Forces force development and systems cybersecurity assessments & testing (outcomes).
4. Improved rapid response for short-notice mission rehearsal requirements from days to on-demand (outcomes).

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA
--	--

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	0.000	0.000	44.500	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
758: Joint National Training Capability (JNTC)	0.000	0.000	32.550	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
761: Joint Simulations Systems (JSS)	0.000	0.000	1.103	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
769: Joint Knowledge Development & Distribution Capability (JKDDC)	0.000	0.000	4.168	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
701: Air Force Joint National Training Capability (JNTC)	0.000	0.000	2.964	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
772: Navy Joint National Training Capability (JNTC)	0.000	0.000	3.715	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

**Note**  
 For FY 2019 and beyond data, please see PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.

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

These programs support readiness of the joint force by creating a joint training environment to replicate the complex and changing operational environment. These investments directly support defense strategic guidance and enhance joint warfighting readiness by building training capabilities that support the operational readiness of the force. The elements associated with this coordinated effort consist of:

- Joint National Training Capability (JNTC)
- Joint Simulation System (JSS)
- Joint Knowledge Development & Distribution Capability (JKDDC)
- Air Force JNTC
- Navy JNTC

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 6: RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0804767J I <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	
<p>JNTC: The mission of the Joint National Training Capability program is to advance joint capabilities and interoperability by concentrating on emerging joint training requirements through training experiences using a managed set of globally distributed capabilities and activities. The program resources Service and Special Operations Forces joint training that improves interoperability and realism of tactical and operational joint training between the Services and USSOCOM. JNTC enables joint training for Combatant Commands and Services by developing relevant joint training content and ensuring global distributed access. JNTC enabling capabilities support the Services and USSOCOM in their requirement to provide trained and ready forces in support of Combatant Command operational requirements. This program focuses efforts on improving, rather than consuming readiness and creating a ready surge force consistent with Chairman’s guidance.</p> <p>JSS: The Joint Simulation System, consisting of the Joint Theater Level Simulation and the Joint Conflict and Tactical Simulation, provides a low cost, distributed or deployable, web-based joint training capability with a small technical and operator footprint. JSS funding provides warfighters with joint simulations and tools that enhance and enable joint training across Services, Combatant Commands, Combat Support Agencies, NATO, and multinational partners. The joint simulations and tools provided by JSS funding are critical enablers that support the delivery of trained, capable, and interoperable joint forces. JSS intent is to maintain a capability to share simulation environments with coalition partners by continuing limited investments ensuring Joint Theater Level Simulation and Joint Conflict and Tactical Simulation remain relevant providing reliable, low-cost, small footprint, distributed, and deployable joint training solutions.</p> <p>JKDDC: Joint Knowledge Development &amp; Distribution Capability (JKDDC) Joint Knowledge Online (JKO) is the program of record for online joint training that implements and operationalizes the OSD training transformation JKDDC. JKO directly supports the CE2T2 program by developing, delivering, tracking, reporting, and supporting online training for Combatant Command exercises; Combatant Command required training; doctrinally based joint operations core curriculum; multinational, coalition, interagency training; OSD required training (externally funded); and administration of the Senior Enlisted Joint Professional Military Education program. JKO expends RDT&amp;E funding for leading edge technology review, market research, and integration to directly enhance various aspects of the training capability required to support Combatant Commanders, CE2T2 program goals and objectives, and the Chairman's training guidance. JKO satisfies all requirements necessary to provide CE2T2 stakeholders with a distributed learning capability and access to web-based training content, learning resources, and distributed online training tools.</p> <p>Air Force JNTC: Air Force JNTC funding provides a focused upgrade to develop models for space-based and cyber capabilities for integration into the Joint Live, Virtual, and Constructive (JLVC) environment. Air Force supports development of cross-domain solutions that enable the integration of systems with disparate security requirements which significantly increases the training audience to additional joint and coalition participants. Additionally, the Air Force supports the integration of tactical models into the virtual environment.</p> <p>Navy JNTC: These funds enable Navy to develop unique maritime capabilities that integrate JLVC elements into a seamless joint training environment. Navy program activities include conducting research, development, test and evaluation, and cross-service architecture certification on joint-capable systems. Additionally, the program develops cross-domain architectures for U.S. and coalition forces and ensures sister service modeling/simulation and instrumentation efforts follow a unified standard.</p>		



**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2019 The Joint Staff	<b>Date:</b> February 2018
--	----------------------------

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 6: RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>
--	--

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>
Previous President's Budget	0.000	44.500	0.000	-	0.000
Current President's Budget	0.000	44.500	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

**Change Summary Explanation**

COCOM Exercise Engagement and Training Transformation (CE2T2) transferred to The Joint Staff in FY 2018 in PE 0804767J from 0804767D8Z. Prior year FY 2017 data will be reported by OSD P&R.

Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and out to properly align CE2T2 RDT&E funding to a Non-MHA PE similar to the O&M appropriation. For FY 2019 and beyond data, please see R-2 for PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA					<b>Project (Number/Name)</b> 758 / Joint National Training Capability (JNTC)		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
758: Joint National Training Capability (JNTC)	0.000	0.000	32.550	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

COCOM Exercise Engagement and Training Transformation (CE2T2) transferred to the Joint Staff in FY 2018 in PE 0804767J from 0804767D8Z.

For FY 2019 and beyond data, please see PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.

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

Investment in the Joint National Training Capability (JNTC) program enables Service and Combatant Commands to train as they operate. The funding requested continues to modernize joint training capabilities into a single integrating architecture aligned to DoD Chief Information Officer IT mandates. Funding supports the development of cloud-enabled modular training application services. Program intent is to reduce dependence on touch labor, and mitigate the impact of reductions in operation and sustainment funding. Momentum must be maintained to deliver operationally relevant training environments and respond to changes in global security landscape and the warfighters' operational environment. JNTC enables the Department of Defense to be responsive to the warfighters' changing operational concepts, threat environments, and best practices. In FY 2018, this investment continues expanding capabilities and access for Service and Combatant Command trainers to plan and execute joint training. Funds support improved relevance and realism of training by providing capabilities that replicate the contemporary and future operating environment.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Joint National Training Capability (JNTC)	-	32.550	-
<p><b>Description:</b> JNTC provides the technical standards, architecture (blueprint), and development processes required to integrate joint training programs. The Joint Training Environment (JTE) is envisioned as an integrated network of training sites and nodes with accessible joint training and force development services. By leveraging existing training programs and initiating programmatic actions, JNTC develops credible opposing force capabilities and expanded access to assets typically unavailable to the training audience. These capabilities enhance the integration of joint training objectives into Service training events. RDT&amp;E funding supports the technical integration of Joint and Service modeling and simulation training capabilities. The resulting capabilities enable selective aggregation of training audiences at the Combatant Command, Joint Task Force, and Component Command headquarter levels. The funding increases warfighter access to semi-automated training enablers within the Joint Training Synthetic Environment through web-based, modular cloud capabilities.</p>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff	<b>Date:</b> February 2018
---	----------------------------

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	<b>Project (Number/Name)</b> 758 / Joint National Training Capability (JNTC)
--	---	---

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2017	FY 2018	FY 2019
<p>The Adaptive Training Capability Program (ATCP) is a subordinate component of JNTC that enables the joint force to be responsive to the warfighters' changing operational concepts, threat environments, and best practices. ATCP funding advances joint capabilities and interoperability by addressing emerging joint training requirements through a managed set of globally distributed joint live, virtual, and constructive enablers. ATCP funding promotes joint context to Service training programs and joint enablers supporting Combatant Command training requirements and high interest training issues identified in the Chairman's annual training guidance.</p> <p><b>FY 2018 Plans:</b></p> <ol style="list-style-type: none"> <li>1. Integrate role player access capability into the Joint Training Tool environment.</li> <li>2. Continue to mature Joint Training Tool modular services to reach tier 1 and 2 joint training Initial Operating Capability (IOC) in FY 2019. This includes smart graphics that allow planners to describe an operation with graphics which auto-initiates the Joint Training Tool service modules to replicate the movement of forces, adjudicate interaction with opposing forces, and return results of the operation that can drive a training scenario and stimulate the appropriate decision points.</li> <li>3. Continue Joint Training Tool scenario development to support a broader range of joint training options.</li> <li>4. Continue to mature Joint Training Tool cloud capabilities and explore cloud hosting options for the long-term.</li> </ol> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and out to properly align CE2T2 RDT&amp;E funding to a Non-MHA PE similar to the O&amp;M appropriation. For FY 2019 and beyond data, please see R-2 for PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	-	32.550	-

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
N/A

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	<b>Project (Number/Name)</b> 758 / <i>Joint National Training Capability (JNTC)</i>

**E. Performance Metrics**

RDT&E development efforts are evaluated based on the performance metrics. This ensures the joint force trainer capability development effort synchronizes with warfighter requirements. Performance metrics include, but are not limited to: access, cost, realism, relevance, and technology and are defined below.

Access – Develop design standards that enable participation across DoD and, as applicable, with coalition partners. Make the environment available to meet user demands.

Cost – Enable the Joint Force Trainer to prepare and execute training more efficiently than current capabilities allow.

Realism – Enable the Joint Force Trainer to create a training environment that is closer to the real world environment than current capabilities allow.

Relevance – Maintain operational relevance through adaptation to the changing operational environment.

Technology – Sustain the training environment network through developments for distributed home station training that include modular cloud-enabled training services.

Measures:

Cost - Vendors provide ordered hours and projected costs remain within 10 percent of government estimates.

Schedule - Task completions (software enhancements, bug fixes, and cyber security requirements) delivered within six months of government estimate.

Performance - Product results, outcomes or milestones meet specified requirements and successfully pass more than 80 percent of operational assessment test cases.

DoD Demand - Number of Commands, Services, and Agencies using Joint Staff developed training products.

Partner Nation Demand - Number of partner nations using Joint Staff developed training products.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA					<b>Project (Number/Name)</b> 761 / Joint Simulations Systems (JSS)		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
761: Joint Simulations Systems (JSS)	0.000	0.000	1.103	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

COCOM Exercise Engagement and Training Transformation (CE2T2) transferred to the Joint Staff in FY2018 in PE 0804767J from 0804767D8Z.

In FY 2019, this project is merged with 758: Joint National Training Capability (JNTC)

For FY 2019 and beyond data, please see PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.

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

The Joint Simulation System (JSS) will decompose, harvest, and reuse DoD investment in joint simulations to develop cloud-enabled modular services (CEMS), reaching Initial Operating Capability in FY 2016. JSS will further develop the existing Joint Conflict and Tactical Simulation (JCATS) and Joint Theater Level Simulation (JTLS) to remain relevant and responsive to Combatant Command training requirements as the Joint Training Environment is implemented. JSS will provide design and development of web-based applications used as services in the cloud-enabled modular environment.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Joint Simulation System (JSS)	-	1.103	-
<b>Description:</b> This effort provides warfighters with joint simulations and tools that enhance and enable joint training across Services, Combatant Commands, agencies and coalition partners. These joint simulations and tools are part of an overall joint live, virtual, and constructive baseline of training capabilities. They represent a set of training enablers, and “certified systems” that are interoperable and acceptable for use within the joint training environment. The joint simulations and tools provided by JSS are critical enablers that support the delivery of trained, capable, and interoperable Joint Forces.			
<b>FY 2018 Plans:</b>			
1. Modernize Joint Theater Level Simulation graphical user interface to take advantage of established open source and commercial enhancements.			
2. Modernize Joint Theater Level Simulation after action review capability for more efficient and faster queries and data retrieval.			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	<b>Project (Number/Name)</b> 761 / Joint Simulations Systems (JSS)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
3. Develop the Joint Theater Level Simulation combat systems prototype into a web-based modular capability in support of the Joint Training Synthetic Environment.			
4. Virtualize and eliminate the Joint Theater Level Simulation and Joint Conflict and Tactical Simulation client server architecture in pursuit of a fully web-based service.			
<b><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i></b> Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and out to properly align CE2T2 RDT&E funding to a Non-MHA PE similar to the O&M appropriation. For FY 2019 and beyond data, please see R-2 for PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	1.103	-

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

RDT&E development efforts are evaluated based on performance metrics. This ensures the development of joint force trainer capabilities synchronize with warfighter requirements. Performance metrics include, but are not limited to: time, cost, realism, and fidelity and are defined below.

Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow?

Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more efficiently than current capabilities allow?

Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow?

Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow?

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	<b>Project (Number/Name)</b> 761 / <i>Joint Simulations Systems (JSS)</i>

Measures:

Cost - Vendors provide ordered hours and projected costs remain within ten percent of government estimates.

Schedule - Task completions (software enhancements, bug fixes, and cyber security requirements) delivered within six months of government estimate.

Performance - Product results, outcomes or milestones meet specified requirements and successfully pass more than 80 percent of operational assessment test cases. Joint Theater Level Simulation (JTLS) and Joint Conflict and Tactical Simulation (JCATS) availability of use in support of all training activities remains above 95 percent.

DoD Demand - Number of exercises/events supported by JTLS and JCATS.

Partner Nation Demand - Number of partner nations using Joint Staff developed training products (active foreign military sales cases).

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA				<b>Project (Number/Name)</b> 769 / Joint Knowledge Development & Distribution Capability (JKDDC)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
769: Joint Knowledge Development & Distribution Capability (JKDDC)	0.000	0.000	4.168	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

COCOM Exercise Engagement and Training Transformation (CE2T2) transferred to the Joint Staff in FY2018 in PE 0804767J from 0804767D8Z.

For FY 2019 and beyond data, please see PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.

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

Joint Knowledge Online (JKO) is DoD's authoritative source for online joint training. JKO is a DoD enterprise-wide, Joint individual training toolkit of web-enabled individual and small group training products, services, and enabling training technology. Products and services are developed in response to OSD program goals, CJCS high interest training issues, Joint Staff training priorities, and JKO stakeholders (Combatant Commands, Services, and Combat Support Agencies, interagency, and multinational) prioritized training requirements. JKO supports a career-long joint learning continuum, joint professional military education, and tailored common training standards to Service members for tasks that are jointly executed, resulting in trained, capable, and interoperable joint forces. JKO research and development will improve all components of the joint content management architecture including:

1. JKO Learning Content Management System (LCMS): Development and enhancement is required to integrate advanced individual and staff training technologies and methodologies with larger scale, collective training exercises, and modernize military training capability with a DoD enterprise-wide online training toolkit. JKO LCMS is necessary to develop, host and deliver JKO courses, track and report students' progress, completions and survey results more effectively and efficiently. JKO LCMS extends web-based, distributed access to mission-critical joint training requirements. There are currently over 2.7 million registered users of the JKO LCMS.
2. Small Group Scenario Trainer (SGST) desktop modeling and simulation based training: This JKO capability trains and prepares thousands of military and civilian personnel deploying to Combatant Command theaters of operation prior to serving in their assigned Combined/Joint Task Force (C/JTF) billets. Specifically, C/JTF "battle staffs" will be adequately trained, as individuals and as collective staffs, based on SGST development and implementation throughout the joint training enterprise. JKO integration of SGST simulation exercise scenarios and prerequisite JKO courses enable blended learning training support to large-scale, collective training exercises that augment the joint event learning cycle and support meeting Combatant Commander exercise objectives.
3. JKO mobile application training device development: Development and enhancements facilitate the global distribution of web-based joint training content on portable, hand-held platforms (cell phones and tablets). JKO mobile application extends access to training courses and learning resources to personal use of mobile phones and tablets.



**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	<b>Project (Number/Name)</b> 769 / <i>Joint Knowledge Development &amp; Distribution Capability (JKDDC)</i>

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

	FY 2017	FY 2018	FY 2019
<p><b>Title:</b> Joint Knowledge Development &amp; Distribution Capability (JKDDC)</p> <p><b>Description:</b> Joint Knowledge Online (JKO) advance technology initiatives primarily include the JKO Learning Content Management System (LCMS) application, Small Group Scenario Trainer (SGST) desktop modeling, simulation-based training capability, and mobile courseware training applications. These capabilities increase access to, and facilitate the training and preparation of, hundreds of thousands of military and civilian personnel deploying to Combatant Command (CCMD) theaters of operation prior to serving in their assigned Combined/Joint Task Force (C/JTF) billets. JKO LCMS development and enhancements are required to develop, host, deliver, track, report and support students' completions, progress and survey results more effectively and efficiently. C/JTF "battle staffs" will be better trained, as individuals and as staffs, based on SGST development and implementation throughout the joint training enterprise. JKO mobile courseware training device development facilitates the global distribution of web-based joint training content on portable, hand-held platforms for DoD personnel.</p> <p><b>FY 2018 Plans:</b></p> <ol style="list-style-type: none"> <li>1. Develop, test and deliver two JKO Learning Content Management System (LCMS) releases resulting in improved cybersecurity, and a more effective and efficient online training management application that is interoperable with DoD personnel management systems. Requirements will be derived from CCMD user feedback and DoD training priorities directed by the Deputy Assistant Secretary of Defense for Readiness and the Chairman's training guidance. The objectives are to provide a DoD enterprise-wide online training toolkit, and develop content for pre-exercise training and support (as required by the Services) and support individual and unit training for Special Purpose - Marine Air Ground Task Force missions. JKO anticipates these enhancements will improve access and the ease of use for the projected ~50,000 daily log-ins and ~550,000 monthly course completions by DoD personnel. Improvements to the JKO LCMS will directly benefit thousands of individuals by providing them global 24/7 access to mandatory joint training as they prepare to participate in CCMD exercises and real world missions. JKO will also focus on enhancements to improve the management of individuals' training records and readiness reporting by extending information sharing and web services with DoD personnel management systems.</li> <li>2. Develop, test, and deliver four JKO Small Group Scenario Trainer (SGST) desktop modeling and simulation application releases resulting in a more effective and efficient training capability integrated within the JKO Learning Content Management System (LCMS). JKO anticipates these enhancements will improve the quality of the training experience for CCMD exercise participants resulting in heightened preparedness for real world operations. The SGST will be used as part of the OSD-endorsed blended learning training component in approximately eight CCMD collective training exercises to prepare individuals serving on CCMD required small functional teams and C/JTF "battle staffs."</li> </ol>	-	4.168	-

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	<b>Project (Number/Name)</b> 769 / Joint Knowledge Development & Distribution Capability (JKDDC)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<p>3. JKO will assess, refine, and continue executing its comprehensive plan to enhance the JKO mobile application and mobile training products. JKO's planned components include courseware and video conversions to portable hand-held devices while leveraging other DoD agencies, interagency, and multinational training courseware ported to the JKO mobile application. JKO anticipates the development and conversion of ~200 training courses, eBooks, podcasts, job aids, and videos resulting in reduced cost for classroom training and thousands of hours delivered on demand to DoD personnel mobile platforms worldwide.</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and out to properly align CE2T2 RDT&amp;E funding to a Non-MHA PE similar to the O&amp;M appropriation. For FY 2019 and beyond data, please see R-2 for PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	-	4.168	-

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

Joint Staff prescribed performance metrics include, but are not limited to: time, cost, realism, and fidelity and are defined below:

Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow?

Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more efficiently than current capabilities allow?

Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow?

Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow?

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	<b>Project (Number/Name)</b> 769 / <i>Joint Knowledge Development &amp; Distribution Capability (JKDDC)</i>
<b>Measures:</b>  Identify, develop, test and implement 15 or more cyber-security, operational, and functional JKO LCMS requirements.  Identify, develop, test and implement 12 or more cyber-security, operational, and functional JKO SGST requirements.  Identify, develop, test and implement six or more cyber-security, operational, and functional JKO mobile App requirements.		

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA					<b>Project (Number/Name)</b> 701 / Air Force Joint National Training Capability (JNTC)		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
701: Air Force Joint National Training Capability (JNTC)	0.000	0.000	2.964	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

COCOM Exercise Engagement and Training Transformation (CE2T2) transferred to the Joint Staff in FY2018 in PE 0804767J from 0804767D8Z.

For FY 2019 and beyond data, please see PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.

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

The Air Force JNTC funding provides a focused upgrade to develop models of space-based capabilities for integration into the joint live, virtual, and constructive environment. The Air Force supports development of cross-domain solutions that enable the integration of systems with disparate security requirements which significantly increases the training audience to joint and coalition participants.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Air Force Joint National Training Capability (JNTC)	-	2.964	-
<p><b>Description:</b> Air Force continues to develop joint enablers that drive realistic/effective training by producing a deployable Electronic Warfare training capability for Europe which replicates highly advanced surface-to-air missiles and advanced anti-aircraft artillery threats for U.S. and coalition forces. Additionally, Air Force assists in the engineering, development, and deployment of joint cross-domain information sharing enterprise network architecture which enables joint and coalition participants to train while protecting classified information. Furthermore, the Air Force is creating cyber-contested environments in the distributed mission operations setting to challenge the joint exercise/training audience. Finally, comprehensive space effects are being integrated into the JLVC federation of models.</p> <p><b>FY 2018 Plans:</b></p> <ol style="list-style-type: none"> <li>1. Live, virtual, and constructive - operational training solution supporting collaborative planning, cost, after-action, and return on investment metrics.</li> <li>2. Cyber simulator environment generator and "blue" cyber effects simulation.</li> </ol>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	<b>Project (Number/Name)</b> 701 / Air Force Joint National Training Capability (JNTC)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
3. Space simulation improvements to model both space effects and opposition force capabilities affecting the space environment. <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and out to properly align CE2T2 RDT&E funding to a Non-MHA PE similar to the O&M appropriation. For FY 2019 and beyond data, please see R-2 for PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	2.964	-

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

RDT&E development efforts are evaluated based on performance metrics. This ensures the development of Joint Force Trainer (subject matter expert) capabilities synchronized with warfighter requirements. Performance metrics include, but are not limited to: time, cost, realism, and fidelity and are defined below.

Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow?

Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more efficiently than current capabilities allow?

Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow?

Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow?

Measures :

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff	<b>Date:</b> February 2018
---	----------------------------

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	<b>Project (Number/Name)</b> 701 / <i>Air Force Joint National Training Capability (JNTC)</i>
--	--	--

Cyber: Establish a persistent simulation environment that can be configured rapidly and accurately to reflect the desired operating environment of the training audience. Also, create an ability to reflect cyber activities against a live integrated air defense system.

Space: A fully operational GPS environment which allows space operators to actively participate in distributed mission operations-Space, live, virtual and constructive missile warning, GPS disruption and infrared special events. Also develop models that model Space as a contested environment to accurately portray impacts of adversary actions in the Space domain.

OPFOR: A prototype for a next generation tactical surface to air threat simulator emulating modern threats fielded with potential adversary maneuver elements. A plan for integrating Army ground instrumentation within the Air Force run Polygon Range complex.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA					<b>Project (Number/Name)</b> 772 / Navy Joint National Training Capability (JNTC)		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
772: Navy Joint National Training Capability (JNTC)	0.000	0.000	3.715	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

COCOM Exercise Engagement and Training Transformation (CE2T2) transferred to the Joint Staff in FY2018 in PE 0804767J from 0804767D8Z.

For FY 2019 and beyond data, please see PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.

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

These funds enable the Navy to develop unique maritime capabilities that integrate joint live, virtual and constructive elements into a seamless joint training environment. The Navy program activities include conducting research, development, test and evaluation, and cross-service architecture certification on joint-capable systems. Additionally, the program develops cross-domain architectures for U.S. and coalition forces and ensures sister service modeling/simulation and instrumentation efforts follow a unified standard.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Navy Joint National Training Capability (JNTC)	-	3.715	-
<b>Description:</b> Develops unique maritime capabilities that integrate joint live, virtual, and constructive (JLVC) elements into a seamless joint training environment. Using a scientific and phased approach that focuses on modeling ground, air, space, and maritime capabilities, this program researches new technologies and methods that provide a crucial technology-based foundation to all JNTC Training Transformation (T2), JLVC Federation, and Combatant Commanders exercise and engagement operations.			
<b>FY 2018 Plans:</b>			
1. Continue alignment of Navy LVC training standards with JLVC training standards to include integrated standards with USMC's aviation distributed virtual training environment.			
2. Develop integrated capabilities between Navy tactical training ranges and synthetic training capabilities in support of Navy LVC efforts.			
3. Accelerate research and development of combat identification training simulation as an enabler for spectrum operations in support of the information warfare commander.			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA	<b>Project (Number/Name)</b> 772 / Navy Joint National Training Capability (JNTC)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
4. Accelerate exploration of technologies to enable integrated air and missile defense and other combined warfare area and joint training with coalition partners in the Pacific Fleet area of responsibility including Japan, Korea, and Australia.			
5. Continue collaborative development with Service and agency partners to improve training realism and relevancy for tactical to operational levels of war.			
<b><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i></b> Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and out to properly align CE2T2 RDT&E funding to a Non-MHA PE similar to the O&M appropriation. For FY 2019 and beyond data, please see R-2 for PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) – Non MHA.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	3.715	-

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
N/A

**E. Performance Metrics**  
RDT&E development efforts are evaluated based on performance metrics. This ensures the Joint Force Trainer (subject matter expert) capabilities developed synchronizes with warfighter requirements. Performance metrics include, but are not limited to: time, money, realism, and fidelity and are defined below.

Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow?

Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training at a more effective and efficient cost than current capabilities allow?

Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow?



**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA</i>	<b>Project (Number/Name)</b> 772 / <i>Navy Joint National Training Capability (JNTC)</i>
<p>Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow?</p> <p>Measures:</p> <p>Produce one Navy Training Baseline (NTB) software release to include documentation.</p> <p>Design and implement upgrades to Joint Semi-Automated Forces (JSAF) consistent with approved requirements and contractual requirements.</p> <p>Document the effects of JSAF capabilities (robustness) and stability.</p> <p>Design, implement, test, and integrate NTB enhancements in accordance with requirements.</p> <p>Continuously update the common operational picture during large scale JLVC exercises.</p>		

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA
--	--

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	-	0.000	0.000	42.940	-	42.940	40.071	39.209	41.044	41.044	Continuing	Continuing
758: Joint National Training Capability (JNTC)	-	0.000	0.000	29.871	-	29.871	27.198	27.775	30.705	30.705	Continuing	Continuing
769: Joint Knowledge Development & Distribution Capability (JKDDC)	-	0.000	0.000	1.126	-	1.126	1.108	1.108	1.108	1.108	Continuing	Continuing
701: Air Force Joint National Training Capability (JNTC)	-	0.000	0.000	2.917	-	2.917	2.869	2.869	2.869	2.869	Continuing	Continuing
772: Navy Joint National Training Capability (JNTC)	-	0.000	0.000	3.260	-	3.260	3.042	3.042	3.042	3.042	Continuing	Continuing
773: Joint Interoperability Division (JID)	-	0.000	0.000	1.845	-	1.845	1.919	1.095	0.000	0.000	Continuing	Continuing
774: USMC Joint National Training Capability (JNTC)	-	0.000	0.000	0.921	-	0.921	0.935	0.320	0.320	0.320	Continuing	Continuing
775: Advanced Distributed Learning (ADL)	-	0.000	0.000	3.000	-	3.000	3.000	3.000	3.000	3.000	Continuing	Continuing

**Note**  
 For FY 2018 and prior year data, please see PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA.

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

These programs support readiness of the joint force by creating a joint training environment to replicate the complex and changing operational environment. These investments directly support defense strategic guidance and enhance joint warfighting readiness by building training capabilities that support the operational readiness of the force. The elements associated with this coordinated effort consist of:

- Joint National Training Capability (JNTC)
- Joint Knowledge Development & Distribution Capability (JKDDC)
- Air Force Joint National Training Capability (JNTC)

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 6: RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0804768J I <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>	
<ul style="list-style-type: none"> <li>- Navy Joint National Training Capability (JNTC)</li> <li>- Joint Interoperability Division (JID)</li> <li>- Marine Corps Joint National Training Capability (JNTC)</li> <li>- Advanced Distributed Learning (ADL)</li> </ul> <p>JNTC: The mission of the Joint National Training Capability (JNTC) program is to advance joint capabilities and interoperability by concentrating on emerging joint training requirements through collective training using a managed set of globally distributed capabilities and activities. The program resources Service and Special Operations Forces joint training that improve interoperability and realism of tactical and operational joint training between the Services and USSOCOM. JNTC enables joint training for Combatant Commands and Services by developing joint training content and ensuring global distributed access. JNTC enabling capabilities support Services and USSOCOM requirements to provide trained and ready forces in support Combatant Command operational requirements. This program focuses efforts on improving, rather than consuming readiness and create a ready surge force consistent with Chairman's guidance.</p> <p>JKDDC: Joint Knowledge Development &amp; Distribution Capability (JKDDC) Joint Knowledge Online (JKO) is the program of record for online joint training that implements and operationalizes the OSD training transformation JKDDC. JKO directly supports the CE2T2 program by developing, delivering, tracking, reporting, and supporting online training for Combatant Command exercises; Combatant Command required training; doctrinally based Joint Operations Core Curriculum; multinational, coalition, interagency training; OSD required training; and administration of the Senior Enlisted Joint Professional Military Education program. JKO expends RDT&amp;E funding for leading edge technology review, market research, and integration to directly enhance various aspects of the training capability required to support Combatant Commanders, CE2T2 Program Goals and Objectives, and the Chairman's training guidance. JKO satisfies all requirements necessary to provide CE2T2 stakeholders with a distributed learning capability and access to web-based training content, learning resources, and distributed online training tools.</p> <p>Air Force JNTC: The Air Force JNTC funding provides a focused upgrade to develop models for space-based and cyber capabilities for integration into the Joint Live, Virtual, and Constructive (JLVC) environment. Air Force supports development of cross-domain solutions that enable the integration of systems with disparate security requirements which significantly increases the training audience to additional joint and coalition participants. Additionally, the Air Force supports the integration of tactical models into the virtual environment.</p> <p>Navy JNTC: These funds enable Navy to develop unique maritime capabilities that integrate JLVC elements into a seamless joint training environment. The Navy program activities include conducting research, development, test and evaluation, and cross-service architecture certification on joint-capable systems. Additionally, the program develops cross-domain architectures for U.S. and coalition forces and ensures sister service modeling/simulation and instrumentation efforts follow a unified standard.</p> <p>JID: Joint Interoperability Division (JID) supports 35 annual schoolhouse interoperability courses and up to six CAPSTONE Joint Interface Control Officer (JICO) courses tied to various Combatant Command (CCMD) joint exercises. JID trains CCMD, Services and partner nations' operations center personnel on interoperability planning</p>		

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2019 The Joint Staff	<b>Date:</b> February 2018
--	----------------------------

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 6: RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>
--	--

tasks required during contingencies and exercises in emerging mission areas such as joint fires, net enabled weapons, remotely piloted aircraft, integrated air and missile defense, and contested operations including secure internet with Link-16/TDL equipped major weapon systems and smart bombs.

Marine Corps JNTC: These funds provide USMC stability and risk reduction to a variety of ongoing joint efforts focused on improving the fidelity and realism of training simulation systems that prepare Marine Air Ground Task Force (MAGTF) units for deployment in support of CCMD operations and is additionally available to other organizations via the JLVC federation of training tools. In support of the Commandant's planning guidance, the Marine Corps will continue to improve performance and support of the MAGTF Tactical Warfare Simulation in the areas of the JLVC-Multi-Resolution Federation (MRF) Bridge, common database terrain data ingestion, and JLVC interoperability. It also provides a single source training environment capability enabling users to select single or multiple play boxes (terrain data sets) for training simulation systems. In addition to developing an exercise planning, design, implementation, execution, and control tool, it also enhances pattern of life and indigenous population modular service enabling exercise designers' ability to rapidly build new scenarios and incorporate human geography elements into training scenarios.

ADL: The Advanced Distributed Learning (ADL) initiative supports innovation and provides policy oversight to help the Services, Joint Staff, and partner agencies deliver training and education more efficiently and cost effectively. ADL provides policy oversight and coordination across DoD, coalition partners, and other Federal agencies for distributed learning. This oversight supports interagency interoperability and promotes personnel readiness, ensuring the right people receive the right training at the right time.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>
Previous President's Budget	0.000	0.000	42.940	-	42.940
Current President's Budget	0.000	0.000	42.940	-	42.940
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

**Change Summary Explanation**

Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and beyond to properly align CE2T2 RDT&E funding to a Non-MHA PE. For FY 2018 and prior year data, please see R-2 for PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA					<b>Project (Number/Name)</b> 758 / Joint National Training Capability (JNTC)		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
758: Joint National Training Capability (JNTC)	-	0.000	0.000	29.871	-	29.871	27.198	27.775	30.705	30.705	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Investment in the Joint National Training Capability (JNTC) program enables Service and Combatant Commands to train as they operate. The requested funding continues to modernize joint training capabilities into a single integrating architecture for joint training aligned to DoD Chief Information Officer IT mandates. Funding supports development of cloud-enabled modular training application services. Program focus is to deliver operationally relevant training environments and respond to changes in the global security landscape and the warfighter's operational environment. JNTC enables the Department of Defense to be responsive to the warfighters' changing operational concepts, threat environments, and best practices. Funds support improved relevance and realism of training by providing capabilities that replicate the contemporary and future operating environment.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Joint National Training Capability (JNTC)	0.000	-	29.871
<p><b>Description:</b> JNTC provides the technical standards, architecture (blueprint), and development processes required to integrate/link joint training programs. The Joint Training Environment is envisioned as an integrated network of training sites and nodes with accessible joint training and force development services. By leveraging existing training programs and initiating programmatic actions, JNTC develops credible opposing force capabilities and expanded access to assets typically unavailable to the training audience. These capabilities enhance the integration of joint training objectives into Service training events. RDT&amp;E funding supports the technical integration of Joint and Service modeling and simulation training capabilities. The resulting capabilities enable selective aggregation of training audiences at the Combatant Command, Joint Task Force, and Component Command headquarter level. The funding supports modernization of the joint training environment (JTE) to increase warfighter access to semi-automated training enablers within the joint training synthetic environment (JTSE) through web-based, modular cloud capabilities.</p> <p><b>FY 2019 Plans:</b></p> <ol style="list-style-type: none"> <li>1. Continue to modernize the information technology architecture supporting the delivery of joint training capabilities and services. Goal is to reduce development, integration, and information technology life-cycle costs.</li> <li>2. Design, develop, and integrate tailored architectures, adaptive technology, and plans for Joint Staff, Combatant Commander, and Service training events/exercises.</li> </ol>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff	<b>Date:</b> February 2018
---	----------------------------

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA	<b>Project (Number/Name)</b> 758 / Joint National Training Capability (JNTC)
--	---	---

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2017	FY 2018	FY 2019
<p>3. Add capability aligned to exercising operational plans that represents cross-theater challenges, smaller exercises and focus areas, and enabling innovative and low cost training approaches.</p> <p>4. Develop functional capabilities in accordance with the Joint Training Synthetic Environment (JTSE) modeling and simulation roadmap.</p> <p>5. Manage Joint Training Tool (JTT) development in accordance with the approved Joint Staff Modeling and Simulation Roadmap (May 2016), and guided by the Joint Training Interoperability Standards (June 2016). The first major milestone is Initial Operating Capability (IOC) in 2Q FY 2019. JTT Tier 1 and 2 Full Operational Capability (FOC) is targeted for 2Q FY 2021 and will provide refined Joint training capabilities to support Tier 1 and 2 exercises and further enable the Services to integrate and draw joint context to execute Tier 3 and 4 training and enhanced low overhead stimulation capabilities.</p> <p>6. Enhance current joint simulation (within JLVC) to keep pace with operational environment changes.</p> <p>7. Manage the enhancements to Service owned JLVC federates and technically integrate the broader JLVC federation following these enhancements.</p> <p>8. Promote operational relevance, technical relevance, and cybersecurity of Joint Theater Level Simulation (JTLS) and Joint Conflict and Tactical Simulation (JCATS).</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and out to properly align CE2T2 RDT&amp;E funding to a Non-MHA PE similar to the O&amp;M appropriation. For FY 2018 and prior year data, please see R-2 for PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) – MHA.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	-	29.871

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>	<b>Project (Number/Name)</b> 758 / <i>Joint National Training Capability (JNTC)</i>

**D. Acquisition Strategy**  
N/A

**E. Performance Metrics**  
RDT&E development efforts are evaluated based on the performance metrics below. This ensures the Joint Force Trainer capabilities development effort synchronizes with warfighter requirements. Performance metrics include, but are not limited to: access, cost, realism, relevance, and technology and are defined below.

Access – Develop design standards that enable participation across DoD and, as applicable, with Coalition Partners. Make the environment available to meet user demands.

Cost – Enable the Joint Force Trainer to prepare and execute training more efficiently than current capabilities allow.

Realism – Enable the Joint Force Trainer to create a training environment that is closer to the real world environment than current capabilities allow.

Relevance – Maintain operational relevance through adaptation to the changing operational environment.

Technology – Sustain the training environment network through developments for distributed home station training that include modular cloud-enabled training services.

Measures:

Cost - Vendors provide ordered hours and projected costs remain within 10 percent of government estimates.

Schedule - Task completions (software enhancements, bug fixes, and cyber security requirements) delivered within six months of government estimate.

Performance - Product results, outcomes or milestones meet specified requirements and successfully pass more than 80 percent of operational assessment test cases.

DoD Demand - Number of Commands, Services, and Agencies using Joint Staff developed training products.

Partner Nation Demand - Number of partner nations using Joint Staff developed training products.



**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA					<b>Project (Number/Name)</b> 769 / Joint Knowledge Development & Distribution Capability (JKDDC)		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
769: Joint Knowledge Development & Distribution Capability (JKDDC)	-	0.000	0.000	1.126	-	1.126	1.108	1.108	1.108	1.108	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Joint Knowledge Online (JKO) is the DoD unique and authoritative source for online joint training. JKO is tasked to develop a DoD enterprise-wide, joint individual training toolkit of web-enabled individual and small group training products, services, and enabling training technology. Products and services are developed in response to OSD program goals, CJCS high interest training issues, Joint Staff training priorities, and JKO stakeholders (Combatant Commands, Services, and Combat Support Agencies, interagency, and multinational) prioritized training requirements. JKO supports a career-long joint learning continuum, joint professional military education, and tailored common training standards to Service members for tasks that are jointly executed, resulting in trained, capable, and interoperable joint forces. JKO research and development will improve all components of the Joint Content Management Architecture including:

1. JKO Learning Content Management System (LCMS): Development and enhancement is required to integrate advanced individual and staff training technologies and methodologies with larger scale, collective training exercises, and modernize military training capability with a DoD enterprise-wide online training toolkit. JKO LCMS is necessary to develop, host and deliver JKO courses and track/report students' progress, completions and survey results more effectively and efficiently. JKO LCMS extends web-based, distributed access to mission-critical joint training requirements. There are currently over 2.7 million registered users of the JKO LCMS.
2. Small Group Scenario Trainer (SGST) desktop modeling and simulation based training: This JKO capability trains and prepares thousands of military and civilian personnel deploying to Combatant Command theaters of operation prior to serving in their assigned Combined/Joint Task Force (C/JTF) billets. Specifically, C/JTF 'battle staffs' will be adequately trained, as individuals and the staffs collectively, based on SGST development and implementation throughout the joint training enterprise. JKO integration of SGST simulation exercise scenarios and prerequisite JKO courses enable blended learning training support to large-scale, collective training exercises that augment the joint event learning cycle and support meeting Combatant Commander exercise objectives.
3. JKO mobile application training device development: Development and enhancements facilitate the global distribution of web-based joint training content on portable, hand-held platforms (cell phones and tablets). JKO Mobile App extends access to training courses and learning resources to personal use of mobile phones and tablets.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Joint Knowledge Development & Distribution Capability (JKDDC)	0.000	-	1.126
<b>Description:</b> Joint Knowledge Online (JKO) advance technology initiatives primarily include the JKO Learning Content Management System (LCMS) application, Small Group Scenario Trainer (SGST) desktop modeling and simulation based			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>	<b>Project (Number/Name)</b> 769 / <i>Joint Knowledge Development &amp; Distribution Capability (JKDDC)</i>

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

training capability, and mobile courseware training applications. These capabilities increase access to, and facilitate the training and preparation of, hundreds of thousands of military and civilian personnel deploying to Combatant Command (CCMD) theaters of operation prior to serving in their assigned Combined/Joint Task Force (C/JTF) billets. JKO LCMS development and enhancements are required to develop, host, deliver, track, report and support students' completions, progress and survey results more effectively and efficiently. C/JTF "battle staffs" will be better trained, as individuals and as staffs, based on SGST development and implementation throughout the joint training enterprise. JKO mobile courseware training device development facilitates the global distribution of web-based joint training content on portable, hand-held platforms for DoD personnel.

**FY 2019 Plans:**

1. Develop, test, and deliver two JKO Learning Content Management System (LCMS) releases resulting in improved cybersecurity, and a more effective and efficient online training management application that is interoperable with DoD personnel management systems. Requirements will be derived from Combatant Command user feedback and DoD training priorities directed by Deputy Assistant Secretary of Defense for Readiness (DASD(R)) and the Chairman's training guidance to provide a DoD enterprise-wide online training toolkit, and perform technical updates of content from FLASH to HTML5 for pre-exercise training and support. JKO anticipates these enhancements will improve access and ease of use for the projected ~50,000 daily log-ins and ~550,000 monthly course completions by DoD personnel. Improvements to the JKO LCMS will directly benefit thousands of individuals by providing global 24/7 access to mandatory joint training as they prepare to participate in CCMD exercises and real world missions. JKO will also focus on enhancements to improve the management of individual training records and readiness reporting as the JKO LCMS extends information sharing and web services with DoD personnel management systems. JKO will continue to maintain compliance with current security directives and to enhance functionality based on user experience and feedback.

2. Develop, test, and deliver four JKO Small Group Scenario Trainer (SGST) desktop modeling and simulation application releases resulting in a more effective and efficient training capability integrated within the JKO LCMS. JKO anticipates these enhancements will improve the quality of the training experience for Combatant Command exercise participants resulting in heightened preparedness for real world operations. The SGST will be used as part of the OSD-endorsed blended learning training packages in approximately eight Combatant Command training exercises and additional training events preparing individuals serving on Combatant Command boards, centers, cells and working groups supporting small functional teams and C/JTF "battle staffs." Individual training proficiency improvement will be measured and quantified as part of the exercise design. JKO will continue to maintain compliance with current security directives and to enhance SGST functionality based on user experience and feedback.

FY 2017	FY 2018	FY 2019

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA	<b>Project (Number/Name)</b> 769 / Joint Knowledge Development & Distribution Capability (JKDDC)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<p>3. JKO will assess, refine, and continue executing a comprehensive plan to enhance the JKO mobile application and mobile training products. JKO's planned components include courseware and video conversions to portable hand-held devices while leveraging other DoD agencies, interagency, and multinational training courseware ported to the JKO mobile application. JKO anticipates the development and conversion of ~200 training courses, eBooks, Podcasts, job aids, and videos resulting in reduced cost for classroom training and thousands of hours delivered onsite and on demand to DoD personnel mobile platforms worldwide. JKO will continue to maintain compliance with dynamic cybersecurity requirements as well as staying current with dynamic industry standard operating systems to enhance its mobile capability based on user experience and feedback.</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and beyond to properly align CE2T2 RDT&amp;E funding to a Non-MHA PE similar to the O&amp;M appropriation. For FY 2018 and prior year data, please see R-2 for PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) – MHA</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	-	1.126

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

Joint Staff prescribed performance metrics include, but are not limited to: time, cost, realism, and fidelity and are defined below.

Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow?

Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training at a more effective and efficient cost than current capabilities allow?

Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow?

UNCLASSIFIED

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>	<b>Project (Number/Name)</b> 769 / <i>Joint Knowledge Development &amp; Distribution Capability (JKDDC)</i>
Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow?		
Measures:		
Identify, develop, test and implement 15 or more cyber-security, operational, and functional JKO Learning Content Management System (LCMS) requirements.		
Identify, develop, test and implement 12 or more cyber-security, operational, and functional JKO Small Group Scenario Trainer (SGST) requirements.		
Identify, develop, test and implement 6 or more cyber-security, operational, and functional JKO mobile application requirements.		

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA	<b>Project (Number/Name)</b> 701 / Air Force Joint National Training Capability (JNTC)
--	---	---

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
701: Air Force Joint National Training Capability (JNTC)	-	0.000	0.000	2.917	-	2.917	2.869	2.869	2.869	2.869	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Air Force JNTC funding provides a focused upgrade to develop models for space-based capabilities for integration into the joint live, virtual, and constructive environment. The Air Force supports development of cross-domain solutions that enable the integration of systems with disparate security requirements which significantly increases the training audience to additional joint and coalition participants.

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

	FY 2017	FY 2018	FY 2019
<b>Title:</b> Air Force Joint National Training Capability (JNTC)	0.000	-	2.917
<b>Description:</b> Air Force continues to develop joint enablers that drive realistic/effective training by producing a deployable electronic warfare training capability for Europe which replicates highly advanced surface-to-air missiles and advanced anti-aircraft artillery threats for U.S. and coalition forces. Additionally, Air Force assists in the engineering, development, and deployment of joint cross-domain information sharing enterprise network architecture which enables joint and coalition participants to train while protecting classified information. Furthermore, the Air Force is creating cyber-contested environments in the distributed mission operations setting to challenge the joint exercise/training audience. Finally, comprehensive space effects are being integrated into the JLVC federation of models.			
<b>FY 2019 Plans:</b>			
1. Live, virtual, constructive - operational training (LVC-OT) training solution supporting collaborative planning, cost, after-action, and return on investment metrics.			
2. Cyber simulator environment generator and "blue" cyber effects simulation.			
3. Space simulation improvements to model both space effects and operational forces capabilities affecting the space environment.			
<b>FY 2018 to FY 2019 Increase/Decrease Statement:</b>			
Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and beyond			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>	<b>Project (Number/Name)</b> 701 / <i>Air Force Joint National Training Capability (JNTC)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
to properly align CE2T2 RDT&E funding to a Non-MHA PE similar to the O&M appropriation. For FY 2018 and prior year data, please see R-2 for PE 0804767J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) – MHA.</i>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	-	2.917

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

RDT&E development efforts are evaluated based on performance metrics. This ensures the development of Joint Force Trainer (subject matter expert) capabilities synchronize with warfighter requirements. Performance metrics include, but are not limited to: time, cost, realism, and fidelity and are defined below.

Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow?

Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training at a more effective and efficient cost than current capabilities allow?

Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow?

Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow?

Measures:

Cyber: Establish a persistent simulation environment that can be configured rapidly and accurately to reflect the desired operating environment of the training audience. Also, create an ability to reflect cyber activities against a live Integrated Air Defense system.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>	<b>Project (Number/Name)</b> 701 / <i>Air Force Joint National Training Capability (JNTC)</i>

Space: a fully operational GPS environment which allows space operators to actively participate in distributed mission operations space live, virtual, constructive missile warning, GPS disruption and Infrared special events. Also develop space models to model Space as a contested environment to accurately portray impacts of adversary actions in the space domain.

Operational Forces: a prototype for a next generation tactical surface to air threat simulator emulating modern threats fielded with potential adversary maneuver elements.

A plan for integrating Army ground instrumentation within the Air Force Polygon Range complex.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>					<b>Project (Number/Name)</b> 772 / <i>Navy Joint National Training Capability (JNTC)</i>		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
<i>772: Navy Joint National Training Capability (JNTC)</i>	-	0.000	0.000	3.260	-	3.260	3.042	3.042	3.042	3.042	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

These funds enable the Navy to develop unique maritime capabilities that integrate joint live, virtual, and constructive elements into a seamless joint training environment. The Navy program activities include conducting research, development, test and evaluation, and cross-service architecture certification on joint-capable systems. Additionally, the program develops cross-domain architectures for U.S. and Coalition Forces and ensures sister service modeling/simulation and instrumentation efforts follow a unified standard.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Navy Joint National Training Capability (JNTC)	0.000	-	3.260
<p><b>Description:</b> Develops unique maritime capabilities that integrate joint live, virtual, and constructive (JLVC) elements into a seamless joint training environment. Using a scientific and phased approach that focuses on modeling ground, air, space, and maritime capabilities, this program researches new technologies and methods that provide a crucial technology-based foundation that supports all JNTC training transformation, JLVC federation, and Combatant Commanders exercise and engagement operations.</p> <p><b>FY 2019 Plans:</b></p> <ol style="list-style-type: none"> <li>1. Research and development for current and emerging Ballistic Missile Defense (BMD) threat representation.</li> <li>2. Development of new capabilities for integration with the annual Navy training baseline software release enabling the development of tactics, techniques and procedures for contested battlespace environments and ballistic missile defense.</li> <li>3. Integration of air and missile defense, electronic warfare, information operations, strike warfare, ballistic missile defense, "blue" force and opposition force capabilities.</li> <li>4. Deliver Navy Continuous Training Environment (NCTE) simulation for combat system and C4I stimulation training.</li> <li>5. Update emerging high-end threat capabilities into JSAF.</li> </ol>			



**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA	<b>Project (Number/Name)</b> 772 / Navy Joint National Training Capability (JNTC)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
6. Integrate virtual and blended reality into the JLVC environment.			
<b><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i></b> Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and beyond to properly align CE2T2 RDT&E funding to a Non-MHA PE similar to the O&M appropriation. For FY 2018 and prior year data, please see R-2 for PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) – MHA			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	-	3.260

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

RDT&E development efforts are evaluated based on performance metrics. This ensures the Joint Force Trainer (subject matter expert) capabilities development effort synchronizes with warfighter requirements. Performance metrics include, but are not limited to: time, money, realism, and fidelity and are defined below.

Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow?

Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training at a more effective and efficient cost than current capabilities allow?

Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow?

Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow?

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>	<b>Project (Number/Name)</b> 772 / <i>Navy Joint National Training Capability (JNTC)</i>

The Navy will produce one Navy training baseline software release to include documentation; will design and implement upgrades to Joint Semi-Automated Forces (JSAF) consistent with approved requirements and contractual requirements and document the effects of JSAF capabilities and stability. Will design, implement, test, and integrate enhancements in accordance with requirements.

For JSAF, Joint Simulation BUS (JBUS) reliability, scalability, and tactical control, the Navy will continuously update the common operational picture during large scale JLVC exercises.

**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA	<b>Project (Number/Name)</b> 773 / Joint Interoperability Division (JID)
--	---	---

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
773: Joint Interoperability Division (JID)	-	0.000	0.000	1.845	-	1.845	1.919	1.095	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

JID supports 35 annual schoolhouse interoperability courses and up to six CAPSTONE Joint Interface Control Officer (JICO) courses tied to various Combatant Command (CCMD) joint exercises. JID trains CCMD, Services and partner nations operations center personnel on interoperability planning tasks required during exercises and contingencies in mission areas such as joint fires, net enabled weapons, remotely piloted aircraft, integrated air and missile defense, and contested operations including secure internet with Link-16/TDL equipped major weapon systems and smart bombs.

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

	FY 2017	FY 2018	FY 2019
<b>Title:</b> Joint Interoperability Division (JID)	0.000	-	1.845
<b>Description:</b> JID requests FY 2019 funding to procure the phase II baseline of the Joint Interface Control Officer (JICO) simulator software and seven mobile training team (MTT) servers in order to emulate Link-16 terminals. The JICO Simulator will allow the JID to train students across the Services on the proper planning, management and execution of tactical data links (TDL). The simulator will allow the JID to build robust practice scenarios that students can execute fixing TDL architecture plans as necessary. This capability will not only create realistic training scenarios with the ability to inject multi-tactical data link network anomalies for training, but can also be used to support Combatant Command (CCMD) operations centers during planned exercises.			
<b>FY 2019 Plans:</b> Build robust practice scenarios for JICO/TDL students.  Automate OPTASK LINK planning message construction.  Emulate Joint Tactical Information Distribution System (JTIDS), Multifunctional Information Distribution System (MIDS), Satellite Transportable Terminal (STT) radio operations between weapon systems.			
<b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> This is a new RDT&E effort starting in FY 2019 to procure Phase II baseline of the JICO simulator and seven MTT servers.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	-	1.845

UNCLASSIFIED

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>	<b>Project (Number/Name)</b> 773 / <i>Joint Interoperability Division (JID)</i>

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
N/A

**E. Performance Metrics**  
Measures:  
Cost - Vendor provides software enhancement costs within 10% of government estimate.  
  
Schedule - Vendor provides software releases delivered within one month of government estimate.  
  
Performance - Vendor provides software that passes 80% of the Operations Assessment Cases.  
  
DoD Demand - Number of JICO courses, joint exercises, and JICO support team requests supported by the JICO simulator software.  
  
Partner Nation - Number of Five Eyes partner nations using the JICO Simulator software (active foreign military sales cases).

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA					<b>Project (Number/Name)</b> 774 / USMC Joint National Training Capability (JNTC)		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
774: USMC Joint National Training Capability (JNTC)	-	0.000	0.000	0.921	-	0.921	0.935	0.320	0.320	0.320	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

These funds advance USMC training capabilities by providing stability and risk reduction to a variety of efforts focused on improving the fidelity and realism of training simulation systems. These systems are tailored to prepare operational Marine Air Ground Task Force (MAGTF) units for worldwide deployment in support of CCMD operations and engagements and are available to any organization or entity training via the JLVC federation of training tools. Based on the Commandant's planning guidance, the Marine Corps will continue to improve performance of the MAGTF Tactical Warfare Simulation in the areas of the JLVC-multi-resolution federation bridge, common database terrain data ingestion, and JLVC interoperability. The MAGTF Tactical Warfare Simulation also provides a single source training environment capability that enables users to select single or multiple play boxes (terrain data sets) for training simulation systems easing the burden of requesting terrain, 3D models, and other geographic layers into a single source. In addition to developing an exercise planning, design, implementation, execution, and control tool, the MAGTF Tactical Warfare Simulation also enhances pattern of life (PoL) / indigenous population modular service enabling exercise designers the ability to rapidly build new scenarios and incorporate human geography elements into the training scenarios.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Marine Corps Joint National Training Capability (JNTC)	0.000	-	0.921
<b>Description:</b> Provides pattern of life (POL) / indigenous population (IP) concept development and integration, supporting both constructive and virtual training simulation systems by injecting "people packs" with realistic attributes and behaviors associated with specified regions. Full integration of terrain generation 3D models and objects into joint federation synthetic training environment eliminates the burden of requesting terrain data by the Services and CCMDs creates a single, shareable, repository across the federation. Addresses crucial integration of MTWS into the Korean side of multi-resolution federation bridge supporting Ulchi Focus Guardian covering training shortfalls in engineering obstacle simulations (minefields, chemical, anti-tank ditches, bridges, etc.). Initiates design and development of a joint exercise design and control tool enhancing connectivity across multiple platforms providing exercise planning, design and control within various joint simulation constructs.			
<b>FY 2019 Plans:</b> Continue development of pattern-of-life (POL) models that can insert synthetic opposing forces and civilian population into scenarios that will autonomously respond with native behaviors of that region providing synthetic adversaries that adapt to various training scenarios in multi-domain joint training.			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA	<b>Project (Number/Name)</b> 774 / USMC Joint National Training Capability (JNTC)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<p>Provide a capability for all simulation systems to use the same standardized terrain datasets across training domains. Sustain pre-deployment training for operations while supporting the readiness of deployed forces, particularly those primarily focused on global response force readiness.</p> <p>Address crucial integration of MTWS into Korean side of multi-resolution federation bridge supporting Ulchi Focus Guardian covering shortfalls identified in addressing engineering obstacle simulations (minefields, chemical, anti-tank ditches, bridges, etc.).</p> <p>Continue design and development of a joint exercise design and control tool enhancing interoperability and connectivity across multiple platforms. Deliver sharper training environment definitions, assist with defining friendly, enemy, neutrals (including joint multinational and synthetic forces), and support to concurrent planning tools.</p> <p>Explore innovative ways to train for operations in strategically challenging transregional, multi-domain and multi-functional (TMM) environments. Use web-based cloud technologies to accelerate exercise development and execution.</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding transferred from PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) - MHA to PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA beginning FY 2019 and beyond to properly align CE2T2 RDT&amp;E funding to a Non-MHA PE similar to the O&amp;M appropriation. For FY 2018 and prior year data, please see R-2 for PE 0804767J / COCOM Exercise Engagement and Training Transformation (CE2T2) – MHA</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	-	0.921

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

RDT&E development efforts are evaluated based on performance metrics. This ensures Marine Corps planners and the Joint Force Trainer (subject matter expert) capabilities involved in these development effort synchronize outcomes with warfighter requirements. Performance metrics include, but are not limited to: time, money, realism, and fidelity and are defined below.

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>	<b>Project (Number/Name)</b> 774 / <i>USMC Joint National Training Capability (JNTC)</i>
<p>Time – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training more timely than current capabilities allow?</p> <p>Cost – Will the effort enable the Joint Force Trainer (subject matter expert) to prepare and execute training at a more effective and efficient cost than current capabilities allow?</p> <p>Realism – Will the effort enable the Joint Force Trainer (subject matter expert) to create a training environment that is closer to the real world environment than current capabilities allow?</p> <p>Fidelity – Will the effort enable the Joint Force Trainer (subject matter expert) to create more detailed capabilities in the training environment than current capabilities allow?</p> <p>The Marine Corps will provide key elements of the proposed change that will allow the USMC to structure a variety of LVC enhancements in a more cost-effective manner to support training efforts within the GRF, NATO, CCMDs, SP-MAGTF and other deploying forces. By expanding the capabilities of existing capabilities through partnerships and cost-sharing efforts that focus on emerging theater training requirements, the changes proposed herein leverage cloud and other technologies to provide the training necessary to address several DoD goals and objectives listed in Commandant's planning guidance and Chairman's joint training guidance.</p>		

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff										<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0804768J / COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA					<b>Project (Number/Name)</b> 775 / Advanced Distributed Learning (ADL)		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
775: Advanced Distributed Learning (ADL)	-	0.000	0.000	3.000	-	3.000	3.000	3.000	3.000	3.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The ADL Initiative supports innovation and provides policy oversight to help the Services, Joint Staff, and partner agencies deliver their training and education more efficiently and cost effectively—anytime, anywhere. ADL provides policy oversight and coordination across DoD, Coalition partners, and other Federal agencies for distributed learning. This work supports interoperability (i.e., ensuring interagency technical and organizational systems function together). Ultimately, this promotes personnel readiness, ensuring the right people receive the right training and education, at the right time, and at the right cost.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Advanced Distributed Learning (ADL)	0.000	-	3.000
<b>Description:</b> The ADL Initiative supports innovation and provides policy oversight to help the Services, Joint Staff, and partner agencies deliver their training and education more efficiently and cost effectively—anytime, anywhere. ADL provides policy oversight and coordination across DoD, Coalition partners, and other Federal agencies for distributed learning. This work supports interoperability (i.e., ensuring interagency technical and organizational systems function together). Ultimately, this promotes personnel readiness, ensuring the right people receive the right training and education, at the right time, and at the right cost.			
<b>FY 2019 Plans:</b>			
1. Continue implementation of revised DoDI 1322.26 requirements, while also providing coordination with Joint Services, and guidance on the incorporation of xAPI into distributed learning software systems.			
2. Provide support to joint services on transitioning emerging learning systems to include digital tutors, personal learning assistants, and the like which will further personalize training.			
3. Further develop research to provide learning science, specifications, guidance and best practices, and technology applications to the joint services in order to further enable their capabilities to deliver next generation learning across a distributed operations environment.			



**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 The Joint Staff		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 0400 / 6	<b>R-1 Program Element (Number/Name)</b> PE 0804768J / <i>COCOM Exercise Engagement and Training Transformation (CE2T2) - Non MHA</i>	<b>Project (Number/Name)</b> 775 / <i>Advanced Distributed Learning (ADL)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
4. Support enhancements to multinational training by continuing collaboration with coalition partners and gaining support to integrate e-learning.			
<b><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i></b> New RDT&E effort starting in FY2019			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	-	3.000

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

RDT&E development efforts are evaluated based on performance metrics. This ensures the development of Joint Force Trainer (subject matter expert) capabilities synchronize with warfighter requirements. Performance metrics include, but are not limited to: time, cost, realism, and fidelity.

Measures:

1. Number of collaborative advanced technology demonstrations (i.e., projects supporting transition of new technology into joint training).
2. Number of improvement plans defined (i.e., articulation of plans for future enhancements to joint training).
3. Influence on key Service and international ADL meetings and conferences that advance the discovery, sharing and delivery of interoperable training content.
4. Increase sharing of data among DoD, other federal agencies, and state and local education departments throughout the U.S. by making educational resources discoverable and retrievable.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2019 The Joint Staff **Date:** February 2018

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0208043J I <i>Planning and Decision Aid System (PDAS)</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
Total Program Element	14.761	3.036	3.037	3.037	-	3.037	3.037	3.097	3.097	3.097	Continuing	Continuing
P001: <i>Planning and Decision Aid System OPS</i>	14.761	3.036	3.037	3.037	-	3.037	3.037	3.097	3.097	3.097	Continuing	Continuing

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

Provides engineering and testing support to the Planning and Decision Aid System, a classified Joint Staff automated information system supporting the Combatant Commanders, Services, and Department of Defense agencies.

Classified details provided in a separate budget exhibit submitted on SIPRNET.

<b><u>B. Program Change Summary (\$ in Millions)</u></b>	<b><u>FY 2017</u></b>	<b><u>FY 2018</u></b>	<b><u>FY 2019 Base</u></b>	<b><u>FY 2019 OCO</u></b>	<b><u>FY 2019 Total</u></b>
Previous President's Budget	3.038	3.037	3.037	-	3.037
Current President's Budget	3.036	3.037	3.037	-	3.037
Total Adjustments	-0.002	0.000	0.000	-	0.000
• Congressional General Reductions	-0.002	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

**Change Summary Explanation**

FY 2017 decrease due to Congressional Mark to FFRDC.

Classified details provided in a separate budget exhibit submitted on SIPRNET.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification: PB 2019 The Joint Staff** **Date:** February 2018

<b>Appropriation/Budget Activity</b>					<b>R-1 Program Element (Number/Name)</b>							
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 7: Operational Systems Development</i>					PE 0902298J I <i>Management HQ - OJCS</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	18.675	0.826	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.501
P001: <i>Joint Staff Information Network (JSIN)</i>	18.675	0.826	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.501

**Note**

Deputy Secretary of Defense (DepSecDef) approved the alignment of Common IT services in the Pentagon and the National Capital Region (NCR) to the Joint Service Provider (JSP) operating as a field service activity in Defense Information Systems Agency (DISA). In FY 2018, JSIN resources will permanently transfer to JSP (DISA PE 0305830K).

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

Provides funds for the Joint Staff Information Network (JSIN). JSIN is the network infrastructure (for both classified and unclassified information) enabling collaboration and information-sharing among the Joint Staff, Combatant Commands (CCMD) and the Services. The JSIN also provides crucial business-related, decision-making information, and workflow support affecting military operations in support of the JCS. JSIN improves actions processing for faster coordination of critical issues with Combatant Commands, Services, and agencies, as well as within the Joint Staff.

**B. Program Change Summary (\$ in Millions)**

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>
Previous President's Budget	0.826	0.000	0.000	-	0.000
Current President's Budget	0.826	0.000	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

**Change Summary Explanation**

Deputy Secretary of Defense (DepSecDef) approved the alignment of Common IT services in the Pentagon and the National Capital Region (NCR) to the Joint Service Provider (JSP) operating as a field service activity in Defense Information Systems Agency (DISA). In FY 2018, JSIN resources will permanently transfer to JSP (DISA PE 0305830K).

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED