Department of Defense Fiscal Year (FY) 2018 Budget Amendment

November 2017



Army

Justification Book of

Research, Development, Test & Evaluation, Army

PB Amended 2018 Army

UNCLASSIFIED

Department of Defense FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

03 Nov 2017

Appropriation	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)
Research, Development, Test & Eval, Army	7,861,744	8,330,016	342,356	8,672,372
Total Research, Development, Test & Evaluation	7,861,744	8,330,016	342,356	8,672,372

Department of Defense FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

Appropriation	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total
Research, Development, Test & Eval, Army	9,425,440		20,700	119,368		119,368	9,565,508
Total Research, Development, Test & Evaluation	9,425,440		20,700	119,368		119,368	9,565,500

Department of Defense FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

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Summary Recap of Budget Activities	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)
Basic Research	450,831	486,774		486,774
Applied Research	1,070,349	1,219,959		1,219,959
Advanced Technology Development	1,113,746	1,367,657	13,300	1,380,957
Advanced Component Development & Prototypes	499,287	601,193	25,395	626,588
System Development & Demonstration	2,202,652	2,246,236	236,943	2,483,179
RDT&E Management Support	1,259,926	1,187,620	14,134	1,201,754
Operational Systems Development	1,264,953	1,220,577	52,584	1,273,161
Total Research, Development, Test & Evaluation	7,861,744	8,330,016	342,356	8,672,372
Summary Recap of FYDP Programs				
General Purpose Forces	802,086	550,251	34,530	592,781
Intelligence and Communications	400,329	228,652	16,954	245,606
Research and Development	6,596,225	7,476,231	290,872	7,767,103
Central Supply and Maintenance	58,503	62,257		62,257
Administration and Associated Activities	65			
Space				
Classified Programs	4,536	4,625		4,625
Total Research, Development, Test & Evaluation	7,861,744	8,330,016	342,356	8,672,372

Department of Defense FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

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Summary Recap of Budget Activities	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total
Summary Recap of Budget Activities	vedresc			nequese			
Basic Research	430,022						430,022
Applied Research	889,182						889,182
Advanced Technology Development	1,070,977		12,000				1,082,977
Advanced Component Development & Prototypes	890,889	G.	8,700	18,000		18,000	917,589
System Development & Demonstration	3,012,840			57,840		57,840	3,070,680
RDT&E Management Support	1,253,845	25					1,253,845
Operational Systems Development	1,877,685			43,520	V	43,528	1,921,213
Total Research, Development, Test & Evaluation	9,425,440		20,700	119,368		119,368	9,565,508
Summary Recap of FYDP Programs							
General Purpose Forces	710,401			15,000		15,000	725,401
Intelligence and Communications	370,519			29,728	•	29,728	400,247
Research and Development	8,215,942	*	20,700	74,640		74,640	8,311,282
Central Supply and Maintenance	60,877						60,877
Administration and Associated Activities							
Space	60,547						60,547
Classified Programs	7,154						7,154
Total Research, Development, Test & Evaluation	9,425,440		20,700	119,368		119,368	9,565,508

Department of the Army FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority

(Dollars in Thousands)

FY 2017 FY 2017 FY 2017 FY 2016 Base oco Total Summary Recap of Budget Activities Enactment Enactment Base + QCO (Base + OCO) --------486,774 486,774 Basic Research 450,831 Applied Research 1,070,349 1,219,959 1,219,959 Advanced Technology Development 1,113,746 1,367,657 13,300 1,380,957 Advanced Component Development & Prototypes 499,287 601,193 25,395 626,588 System Development & Demonstration 2,202,652 2,246,236 236,943 2,483,179 RDT&E Management Support 1,259,926 1,187,620 14,134 1,201,754 Operational Systems Development 1,264,953 1,220,577 52,584 1,273,161 Total Research, Development, Test & Evaluation 8,330,016 342,356 8,672,372 7,861,744 Summary Recap of FYDP Programs 34,530 592,781 General Purpose Forces 802,086 558,251 Intelligence and Communications 400,329 228,652 16,954 245,606 Research and Development 6,596,225 7,476,231 290,872 7,767,103 Central Supply and Maintenance 58,503 62,257 62,257 Administration and Associated Activities 65 Space Classified Programs 4,536 4,625 4,625 Total Research, Development, Test & Evaluation 7,861,744 8,330,016 342,356 8,672,372

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(Dollars in Thousands)

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Summary Recap of Budget Activities	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total
Basic Research	430,022						430,022
Applied Research	889,182						889,182
Advanced Technology Development	1,070,977		12,000				1,082,977
Advanced Component Development & Prototypes	890,889		8,700	18,000		18,000	917,589
System Development & Demonstration	3,012,840			57,840		57,840	3,070,680
RDT&E Management Support	1,253,845						1,253,845
Operational Systems Development	1,877,685			43,528		43,528	1,921,213
Total Research, Development, Test & Evaluation	9,425,440		20,700	119,368		119,368	9,565,508
Summary Recap of FYDP Programs			5				
General Purpose Forces	710,401			15,000		15,000	725,401
Intelligence and Communications	370,519			29,728		29,728	400,247
Research and Development	8,215,942		20,700	74,640		74,640	8,311,282
Central Supply and Maintenance	60,877			Y			60,877
Administration and Associated Activities							
Space	60,547						60,547
Classified Programs	7,154					29	7,154
Total Research, Development, Test & Evaluation	9,425,440		20,700	119,368		119,368	9,565,508

Department of the Army FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority

(Dollars in Thousands)

Appropriation: 2040A Research, Development, Test & Eval, Army

Ι	ine	Program Element			FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	S e
	No 	Number	Item	Act	Base + OCO	Enactment	Enactment	(Base + OCO)	c -
	1	0601101A	In-House Laboratory Independent Research	01	12,525	12,376		12,376	U
	2	0601102A	Defense Research Sciences	01	271,933	293,031		293,031	U
	3	0601103A	University Research Initiatives	01	67,225	69,133		69,133	U
	4	0601104A	University and Industry Research Centers	01	99,148	112,234		112,234	
		Basic	Research		450,831	486,774		486,774	
3	5	0602105A	Materials Technology	02	67,806	82,525		82,525	U
	6	0602120A	Sensors and Electronic Survivability	02	57,202	51,103		51,103	U
	7	0602122A	TRACTOR HIP	02	6,879	6,995		6,995	Ū
	8	0602211A	Aviation Technology	02	58,497	69,885		69,885	U
	9	0602270A	Electronic Warfare Technology	02	18,502	35,454		35,454	U
	10	0602303A	Missile Technology	02	51,801	67,792		67,792	U
	11	0602307A	Advanced Weapons Technology	02	36,906	53,790		53,790	υ
4	12	0602308A	Advanced Concepts and Simulation	02	26,886	30,677		30,677	U
	13	0602601A	Combat Vehicle and Automotive Technology	02	95,763	92,928		92,928	U
	14	0602618A	Ballistics Technology	02	118,221	105,411		105,411	U
	15	0602622A	Chemical, Smoke and Equipment Defeating Technology	02	3,713	3,921		3,921	υ
	16	0 6 02623A	Joint Service Small Arms Program	02	5,270	5,542		5,542	υ
	17	0602624A	Weapons and Munitions Technology	02	81,447	120,056		120,056	U
	18	0602705A	Electronics and Electronic Devices	02	62,654	74,305		74,305	Ū

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Appropriation: 2040A Research, Development, Test & Eval, Army

Ι	Program ine Element No Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 · Grand Total		
	1 0601101A	In-House Laboratory Independent Research	01	12,010						12,010	ָּט י	
	2 0601102A	Defense Research Sciences	01	263,590						263,590	Ū	
	3 0601103A	University Research Initiatives	01	67,027						67,027	U	
	4 0601104A	University and Industry Research Centers	01	87,395						87,395		
	Basio	Research		430,022				**********		430,022		
	5 0602105A	Materials Technology	02	29,640						29,640	Ŭ	
	6 0602120A	Sensors and Electronic Survivability	y 02	35;730						35,730	Ū	
	7 0602122A	TRACTOR HIP	02	8,627						8,627	U	
	8 0602211A	Aviation Technology	02	66,086						66,086	U	
	9 0602270A	Electronic Warfare Technology	02	27,144						27,144	Ū	
	10 0602303A	Missile Technology	02	43,742						43,742	Ū	
	11 0602307A	Advanced Weapons Technology	02	22,785						22,785	Ü	
	12 0602308A	Advanced Concepts and Simulation	02	28,650						28,650	U	
	13 0602601A	Combat Vehicle and Automotive Technology	02	67,232	*					67,232	'n	
	14 0602618A	Ballistics Technology	02	85,309						85,309	U	
	15 0602622A	Chemical, Smoke and Equipment Defeating Technology	02	4,004						4,004	Ü	
	16 0602623A	Joint Service Small Arms Program	02	5,615						5,615	U	
	17 0602624A	Weapons and Munitions Technology	02	41,455						41,455	U	
	18 0602705A	Electronics and Electronic Devices	02	58,352						50,352	U	

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Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	S e C
19	0602709A	Night Vision Technology	02	37,501	36,062		36,062	Ü
20	0602712A	Countermine Systems	02	35,586	30,484		30,484	O.
21	060271 6A	Human Factors Engineering Technolog	y 02	23,220	23,667		23,667	Ŭ
22	0602720A	Environmental Quality Technology	02	20,270	22,143		22,143	Ū
23	0602782A	Command, Control, Communications • Technology	02	34,749	37,785		37,785	U
24	0602783A	Computer and Software Technology	02	12,266	13,806		13,806	U
25	0602784A	Military Engineering Technology	02	80,130	90,407		90,407	U
26	0602785A	Manpower/Personnel/Training Technology	02	22,474	26,038		26,038	U
27	0602786A	Warfighter Technology	02	38,420	60,092		60,092	U
28	0602787A	Medical Technology	02	74,186	79,091		79,091	U
	Appli	ed Research		1,070,349	1,219,959		1,219,959	
29	0603001A	Warfighter Advanced Technology	03	54,606	51,314		51,314	U
30	0603002A	Medical Advanced Technology	03	103,753	107,341		107,341	U
31	0603003A	Aviation Advanced Technology	03	99,542	112,235		112,235	U
32	0603004A	Weapons and Munitions Advanced Technology	03	95,504	200,683		200,683	U
33	0603005A	Combat Vehicle and Automotive Advanced Technology	03	136,624	168,074		168,074	U
34	0603006A	Space Application Advanced Technology	03	5,384	3,903		3,903	U
35	0603007A	Manpower, Personnel and Training Advanced Technology	03	11,571	14,412		14,412	Ū

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Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	s e c
19	0602709A	Night Vision Technology	02	34,723				27		34,723	U
20	0602712A	Countermine Systems	02	26,190						26,190	Ū
21	. 0602716A	Human Factors Engineering Technolo	gy 02	24,127						24,127	U
22	0602720A	Environmental Quality Technology	02	21,678			5			21,678	U
23	0602782A	Command, Control, Communications Technology	02	33,123						33,123	U
24	0602783A	Computer and Software Technology	02	14,041						14,041	U
25	0602784A	Military Engineering Technology	02	67,720						67,720	U
26	0602785A	Manpower/Personnel/Training Technology	02	20,216						20,216	Ü
27	0602786A	Warfighter Technology	02	39,559	6 90					39,559	U
28	0602787A	Medical Technology	02	83,434						83,434	υ
	Appli	ed Research		889,182						889,182	
29	0603001A	Warfighter Advanced Technology	03	44,863						44,863	U
30	0603002A	Medical Advanced Technology	03	67,780						67,780	U
31	0603003A	Aviation Advanced Technology	03	160,746						160,746	U
32	0603004A	Weapons and Munitions Advanced Technology	03	84,079					×	84,079	U
= 33	0603005A	Combat Vehicle and Automotive Advanced Technology	03	125,537		- ·				125,537	Ü
34	0603006A	Space Application Advanced Technology	03	12,231						12,231	υ
35	0603007A	Manpower, Personnel and Training Advanced Technology	03	6,466						6,466	σ

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No	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	s e c
***				762			********	-
36	0603009A	TRACTOR HIKE	03	9,002	8,074	13,300	21,374	U
37	0603015A	Next Generation Training & Simulation Systems	03	16,735	18,959		18,959	U
38	0603020A	TRACTOR ROSE	03	11,912	11,910		11,910	Ū
39	0603125A	Combating Terrorism - Technology Development	03	32,430	35,673		35,673	U
40	0603130A	TRACTOR NAIL	03	2,381	2,340		2,340	U
41	0603131A	TRACTOR EGGS	03	2,431	2,470		2,470	U
42	0603270A	Electronic Warfare Technology	03	31,810	41,879		41,879	U
43	0603313A	Missile and Rocket Advanced Technology	03	102;490	115,665		115,665	υ
44	0603322A	TRACTOR CAGE	03	10,999	11,107		11,107	U
45	0603461A	High Performance Computing Modernization Program	03	215,138	222,105		222,105	U
46	0 603606A	Landmine Warfare and Barrier Advanced Technology	03	13,425	17,443		17,443	υ
47	0603607A	Joint Service Small Arms Program	03	4,903	5,836		5,836	υ
48	0603710A	Night Vision Advanced Technology	03	39,329	44,447	5) 90	44,447	U
49	0603728A	Environmental Quality Technology Demonstrations	03	14,533	21,134		21,134	U
50	0603734A	Military Engineering Advanced Technology	03	26,247	58,677		58,677	U
51	0603772A	Advanced Tactical Computer Science and Sensor Technology	03	36,658	54,218		54,218	Ú

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Appropriation: 2040A Research, Development, Test & Eval, Army

Lin No	Program e Element Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	\$ e c
3	6 0603009A	TRACTOR HIKE	03	28,552		12,000				40,552	Ū
3	7 0603015A	Next Generation Training & Simulation Systems	03	16,434						16,434	U
3	8 0603020A	TRACTOR ROSE .	03								U
3	9 0603125 A	Combating Terrorism - Technology Development	03	26,903						26,903	Ū
4	0 0603130A	TRACTOR NAIL	03	4,880						4,080	U
4	1 0603131A	TRACTOR EGGS	03	4,326						4,326	U
4	2 0603270A	Electronic Warfare Technology	03	31,296						31,296	U
4	3 0603313A	Missile and Rocket Advanced Technology	03	62,850	G.					62,850	ΰ
4	4 0603322A	TRACTOR CAGE	03	12,323						12,323	υ
4	5 0603461A	High Performance Computing Modernization Program	03	182,331						182,331	Ū
4	6 0603606A	Landmine Warfare and Barrier Advanced Technology	03	17,948						17,948	U
4	7 0603607A	Joint Service Small Arms Program	03	5,796						5,796	U
4	8 0603710A	Night Vision Advanced Technology	03	47,135						47,135	U
4	9 0603728A	Environmental Quality Technology Demonstrations	03	10,421						10,421	ΰ
5	0 0603734A	Military Engineering Advanced Technology	03	32,448						32,448	ΰ
5	1 0603772 A	Advanced Tactical Computer Science and Sensor Technology	03	52,206						52,206	U

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(Dollars in Thousands)

Appropriation: 2040A Research, Development, Test & Eval, Army

	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	s e c
52	0603794A	C3 Advanced Technology	03	36,339	37,758		37,758	Ū
	Advan	aced Technology Development		1,113,746	1,367,657	13,300	1,380,957	
53	0603305A	Army Missle Defense Systems Integration	04	29,270	39,433		39,433	U
54	0603308A	Army Space Systems Integration	04	29,561	23,054	9,375	32,429	U
55	0603327A	Air and Missile Defense Systems Engineering	04					Ū
56	0603619A	Landmine Warfare and Barrier - Adv Dev	04	40,943	72,082		72,082	Ū
57	0603627A	Smoke, Obscurant and Target Defeating Sys-Adv Dev	04	12,894	28,230	16,020	44,250	Ū
58	0603639A	Tank and Medium Caliber Ammunition	04	42,272	48,076		48,076	υ
59	0603645A	Armored System Modernization - Adv Dev	04					Ü
60	0603747A	Soldier Support and Survivability	04	5,035	14,000	×	14,000	U
61	0603766A	Tactical Electronic Surveillance System - Adv Dev	04	17,562	15,730		15,730	Ū
62	0603774A	Night Vision Systems Advanced Development	04	7,003	10,316		10,316	U
63	0603779A	Environmental Quality Technology - Dem/Val	04	8,464	7,781		7,781	U
64	0603790A	NATO Research and Development	04	5,835	2,299		2,299	U
65	0603801A	Aviation - Adv Dev	04		10,009		10,009	U
66	0603804A	Logistics and Engineer Equipment - Adv Dev	04	20,271	18,118		18,118	ū

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Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	s e c
52	0603794A	C3 Advanced Technology	03	33,426	2					33,426	
	Advar	nced Technology Development		1,070,977		12,000				1,082,977	8
53	0603305A	Army Missle Defense Systems Integration	04	9,634						9,634	U
54	0603308A	Army Space Systems Integration	04								U
55	0603327A	Air and Missile Defense Systems Engineering	04	33,949		8,700	15,000		15,000	57,649	U
56	0603619A	Landmine Warfare and Barrier - Adv Dev	04	72,909						72,909	Ū
57	0603627A	Smoke, Obscurant and Target Defeating Sys-Adv Dev	04	7,135						7,135	U
58	0603639A	Tank and Medium Caliber Ammunition	04	41,452						41,452	U
59	0603645A	Armored System Modernization - Adv Dev	04	32,739						32,739	U
60	0603747A	Soldier Support and Survivability	04	10,157			3,000		3,000	13,157	υ
61	0603766A	Tactical Electronic Surveillance System - Adv Dev	04	27,733	39					27,733	ΰ
62	0603774A	Night Vision Systems Advanced Development	04	12,347						12,347	Ū
63	0603779A	Environmental Quality Technology - Dem/Val,	04	10,456						10,456	υ
64	0603790A	NATO Research and Development	04	2,588				185		2,588	U
65	0603801A	Aviation - Adv Dev	04	14,055						14,055	ט
66	0603804A	Logistics and Engineer Equipment - Adv Dev	04	35,333						35,333	Ū

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Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	s e c
67	0603807A	Medical Systems - Adv Dev	04	39,711	40,988		40,988	U
68	0603827A	Soldier Systems - Advanced Development	04	22,251	55,606		55,606	υ
69	0604017A	Robotics Development	04				4	U
70	0604100A	Analysis Of Alternatives	04	7,533	6,605		6,605	U
71	0604114A	Lower Tier Air Missile Defense (LTAMD) Sensor	04		35,115		35,115	Ü
72	0604115A	Technology Maturation Initiatives	04	34,493	60,018		60,018	ŭ
- 73	0604117A	Maneuver - Short Range Air Defense (M-SHORAD)	04					Ū
74	0604118A	TRACTOR BEAM	04					U
75	0604120A	Assured Positioning, Navigation and Timing (PNT) $$	04	26,967	83,238		83,238	Ü
76	0604121A	Synthetic Training Environment Refinement & Prototyping	04					U
77	0604319A	<pre>Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)</pre>	04	149,222			*:	U
78	0305251A	Cyberspace Operations Forces and Force Support	04		30,495		30,495	Ū
79	1206308A	Army Space Systems Integration	04					U
	Advan	ced Component Development & Prototype	es	499,287	601,193	25,395	626,588	
80	0604201A	Aircraft Avionics	05	18,194	62,219		62,219	υ
81	0604270A	Electronic Warfare Development	05	20,586	34,627		34,627	Ū
82	0604280A	Joint Tactical Radio	05	4,415				U

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Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	S e C
67	0603807A	Medical Systems - Adv Dev	04	33,491						33,491	υ
68	0603827A	Soldier Systems - Advanced Development	04	20,239						20,239	U
69	0604017A	Robotics Development	04	39,608						39,608	U
70	0604100A	Analysis Of Alternatives	04	9,921						9,921	Ū
71	0604114A	Lower Tier Air Missile Defense (LTAMD) Sensor	04	76,728						76,728	Ü
72	0604115A	Technology Maturation Initiatives	04	115,221						115,221	U
73	0604117A	Maneuver - Short Range Air Defense (M-SHORAD)	04	20,000						20,000	U
74	0604118A	TRACTOR BEAM	04	10,400			ni (10,400	U
75	0604120A	Assured Positioning, Navigation and Timing (PNT)	04	164,967				×		164,967	υ
76	0604121A	Synthetic Training Environment Refinement & Prototyping	04	1,600						1,600	Ū
77	0604319A	Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)	04	11,303						11,303	Ü
78	0305251A	Cyberspace Operations Forces and Force Support	04	56,492						56,492	υ
79	1206308A	Army Space Systems Integration	04	20,432				American State of the Control of the		20,432	ט
	Advan	ced Component Development & Prototype	es	890,889		8,700	18,000		18,000	917,589	
80	0604201A	Aircraft Avionics	05	30,153			87		72	30,153	U
81	0604270A	Electronic Warfare Development	05	71,671						71,671	U
82	0604280A	Joint Tactical Radio	05								U

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	Program Element			FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	S e
No	Number	Item	Act	Base + OCO	Enactment	Enactment	(Base + OCO)	_
83	0604290A	Mid-tier Networking Vehicular Radio (MNVR)		8,416	12,166		12,166	U
84	0604321A	All Source Analysis System	05	4,309	11,958		11,958	U
85	0604328A	TRACTOR CAGE	05	15,138	12,525		12,525	U
86	0604601A	Infantry Support Weapons	05	86,966	65,977		65,977	U
87	0604604A	Medium Tactical Vehicles	05					U
88	0604611A	JAVELIN	05	3,789	20,001		20,001	U
89	0604622A	Family of Heavy Tactical Vehicles	05		11,424	14	11,424	U
90	0604633A	Air Traffic Control	05	9,714	3,420		3,420	υ
91	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	05	13,599	33,517		33,517	U
92	0604642A	Light Tactical Wheeled Vehicles	05		494		494	U
93	0604645A	Armored Systems Modernization (ASM) - Eng Dev	05		9,673		9,673	U
94	0604710A	Night Vision Systems - Eng Dev	05	65,482	79,481		79,481	U
95	0604713A	Combat Feeding, Clothing, and Equipment	05	1,694	2,053		2,053	U
96	0604715A	Non-System Training Devices - Eng Dev	05	26,768	29,789	5,033	34,822	. n
97	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	05	33,619	58,307	143,900	202,207	U
98	0604742A	Constructive Simulation Systems Development	05	22,609	17,880		17,880	σ
99	0604746A	Automatic Test Equipment Development	05	8,636	8,809		8,809	U

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Program Line Element No Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	S e C -
83 0604290A	Mid-tier Networking Vehicular Radio (MNVR)	05	10,589	PI .					10,589	U
84 0604321A	All Source Analysis System	05	4,774						. 4,774	U
85 0604328A	TRACTOR CAGE	05	17,252				*		17,252	ם
86 0604601A	Infantry Support Weapons	05	87,643						87,643	U
87 0604604A	Medium Tactical Vehicles	05	6,039						6,039	υ
88 0604611A	JAVELIN	05	21,095						21,095	U
89 0604622A	Family of Heavy Tactical Vehicles	05	10,507				(V		10,507	U
90 0604633A	Air Traffic Control	05	3,536						3,536	U
91 0604641A	Tactical Unmanned Ground Vehicle (TUGV)	05								Ū
92 0604642A	Light Tactical Wheeled Vehicles	05	7,000						7,000	U
93 0604645A	Armored Systems Modernization (ASM) - Eng Dev	05	36,242						36,242	'n
94 0604710A	Night Vision Systems - Eng Dev	05	108,504						108,504	U
95 0604713A	Combat Feeding, Clothing, and Equipment	05	3,702						3,702	Ū
96 060 4 715A	Non-System Training Devices - Eng Dev	05	43,575						43,575	Ū
97 0604741A	Air Defense Command, Control and Intelligence - Eng Dev	05	28,726			2			28,726	ט
98 0604742A	Constructive Simulation Systems Development	05	18,562					10	18,562	U
99 0604746A	Automatic Test Equipment Development	05	8,344						8,344	U

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Line No	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	S e c
100	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev	05	8,843	10,482		10,482	Ü
101	0604768A	Brilliant Anti-Armor Submunition (BAT)	05					U
102	0604780A	Combined Arms Tactical Trainer (CATT) Core	05	20,808	15,062		15,062	U
103	0604798A	Brigade Analysis, Integration and Evaluation	05	96,286	89,681		89,681	U
104	0604802A	Weapons and Munitions - Eng Dev	05	10,037	80,325		80,325	υ
105	0604804A	Logistics and Engineer Equipment - Eng Dev	05	43,229	78,829		78,829	U
106	0604805A	Command, Control, Communications Systems - Eng Dev	05	2,780	4,244	£:	4,244	U
107	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	05	39,295	41,107	8	41,107	Ü
108	0604808A	Landmine Warfare/Barrier - Eng Dev	05	63,028	33,337		33,337	U
109	0604818A	Army Tactical Command & Control Hardware & Software	05	125,107	203,184		203,184	Ū
110	0604820A	Radar Development	05	11,821	15,975		15,975	U
111	0604822A	General Fund Enterprise Business System (GFEBS)	05	20,533	6,802		6,802	Ü
112	0604823A	Firefinder	05	2,850	6,421		6,421	U
113	0604827A	Soldier Systems - Warrior Dem/Val	05	15,694	12,388		12,388	υ
114	0604852A	Suite of Survivability Enhancement Systems - EMD	05					U
115	0604854A	Artillery Systems - EMD	05	2,251	1,755		1,755	U

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Line No	Program Element Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2016 Total OCO	FY 2018 Grand Total	
										11,270	. 17
100	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev	05	11,270						F1,210	J
101	0604768A	Brilliant Anti-Armor Submunition (BAT)	05	10,000						10,000	מ
102	0604780A	Combined Arms Tactical Trainer (CATT) Core	05	18,566			=======================================		7	18,566	U
103	0604798A	Brigade Analysis, Integration and Evaluation	05	145,360			×			145,360	U
104	0604802A	Weapons and Munitions - Eng Dev	05	145,232						145,232	U
105	0604804A	Logistics and Engineer Equipment - Eng Dev	05	90,965						90,965	Ū
106	0604805A	Command, Control, Communications Systems - Eng Dev	05	9,910						9,910	Ū
107	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	05	39,238						39,238	Ü
108	0604808A	Landmine Warfare/Barrier - Eng Dev	05	34,684						34,684	U
109	0604818A	Army Tactical Command & Control Hardware & Software	05	164,409						164,409	Ū
110	0604820A	Radar Development	05	32,968						32,968	
111	0604822A	General Fund Enterprise Business System (GFEBS)	05	49,554						49,554	U
112	0604823A	Firefinder	05	45,605						45,605	υ
113	0604827A	Soldier Systems - Warrior Dem/Val	05	16,127					£0.	16,127	
114	0604852A	Suite of Survivability Enhancement Systems - EMD	05	98,600				5		98,600	Ū
115	0604854A	Artillery Systems - EMD	05	1,972						1,972	Ü

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Line No	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	s e c
	**						E	
116	0605013A	Information Technology Development	05	48,028	73,697		73,697	U
117	0605018A	Integrated Personnel and Pay System-Army (IPPS-A)	05	116,215	155,508		155,508	U
118	0605028A	Armored Multi-Purpose Vehicle (AMPV)	05	213,034	184,131		184,131	U
119	0605029A	Integrated Ground Security Surveillance Response Capability (IGSSR-C)	05		4,978		4,978	Ū
120	0605030A	Joint Tactical Network Center (JTNC)	05	12,834	15,034		15,034	U
121	0605031A	Joint Tactical Network (JTN)	05	20,790	16,006		16,006	U
122	0605032A	TRACTOR TIRE	05	10,677	27,254		27,254	U
123	0605033A	Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)	05		5,030		5,030	Ü
124	0605034A	Tactical Security System (TSS)	05		2,903		2,903	U
125	0605035A	Common Infrared Countermeasures (CIRCM)	05	98,496	82,937	10,900	93,837	Ū
126	0605036A	Combating Weapons of Mass Destruction (CWMD)	05		2,088		2,088	Ü
127	0605037A	Evidence Collection and Detainee Processing	05					Ū
128	0605038A	Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) Sensor Suite	05					υ
129	06 0 5041A	Defensive CYBER Tool Development	05		33,820		33,820	U
130	0605042A	Tactical Network Radio Systems (Low-Tier)	05		14,758		14,758	U

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Line No	Program Element Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	S e C
116	0605013A	Information Technology Development	05	81,776						81,776	U
117	0605018A	Integrated Personnel and Pay System-Army (IPPS-A)	05	172,361						172,361	Ū
118	0605028A	Armored Multi-Purpose Vehicle (AMPV)	05	199,778						199,778	U
119	0605029A	Integrated Ground Security Surveillance Response Capability (IGSSR-C)	05	4,418						4,418	ט
120	0605030A	Joint Tactical Network Center (JTNC)	05	15,877						15,877	U
121	0605031A	Joint Tactical Network (JTN)	05	44,150		2				44,150	Ū
122	0605032A	TRACTOR TIRE	05	34,670			5,000		5,000	39,670	U
123	0605033A	Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)	05	5,207						5,207	U
124	0605034A	Tactical Security System (TSS)	05	4,727				10		4,727	U
125	0605035A	Common Infrared Countermeasures (CIRCM)	05	105,778			21,540		21,540	127,318	U
126	0605036A	Combating Weapons of Mass Destruction (CWMD)	05	6,927						6,927	U
127	0605037A	Evidence Collection and Detainee Processing	05	214						214	U
128	0605038A	Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) Sensor Suite	05	16,125						16,125	U
129	0605041A	Defensive CYBER Tool Development	05	55,165						55,165	U
130	0605042A	Tactical Network Radio Systems (Low-Tier)	05	20,076						20,076	υ

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Line No	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	S e c
131	0605047A	Contract Writing System	05		20,653		20,653	U
132	0605049A	Missile Warning System Modernization (MWSM)	05					U
133	0605051A	Aircraft Survivability Development	05	77,395	34,117	73,110	107,227	ū
134	0605052A	Indirect Fire Protection Capability Inc 2 - Block 1	05	ě,	83,954	2	83,954	บ
135	0605053A	Ground Robotics	05					U
136	0605350A	WIN-T Increment 3 - Full Networking	05	32,187				U
137	0605380A	AMF Joint Tactical Radio System (JTRS)	05	10,143	5,026	* 2	5,026	U
138	0605450A	Joint Air-to-Ground Missile (JAGM)	05	79,897	48,953		48,953	U
139	0605456A	PAC-3/MSE Missile	05	2,201				U
140	0605457A	Army Integrated Air and Missile Defense (AIAMD)	05	222,074	282,681		282,681	U
141	0605625A	Manned Ground Vehicle	05	37,692				U
142	0605626A	Aerial Common Sensor	05	2				υ
143	0605766A	National Capabilities Integration (MIP)	05	10,599	4,955		4,955	υ
144	0605812A	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Ph	05	31,197	11,524		11,524	U
145	0605830A	Aviation Ground Support Equipment	05	13,528	2,141		2,141	U
146	0210609A	Paladin Integrated Management (PIM)	05	136,353	41,478		41,478	U
147	0303032A	TROJAN - RH12	05	5,022	4,273		4,273	υ

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Line No	Program Element Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	s e c
131	0605047A	*Contract Writing System	05	20,322						20,322	U
132	0605049A	Missile Warning System Modernization (MWSM)	05	55,810						55,810	Ü
133	0605051A	Aircraft Survivability Development	05	30,879			30,100		30,100	60,979	Ü
134	0605052A	<pre>Indirect Fire Protection Capability Inc 2 - Block 1</pre>	05	175,069						175,069	Ü
135	0605053A	Ground Robotics	05	70,760						70,760	U
136	0605350A	WIN-T Increment 3 - Full Networking	05								υ
137	0605380A	AMF Joint Tactical Radio System (JTRS)	05	8,965						8,965	Ŭ
138	0605450A	Joint Air-to-Ground Missile (JAGM)	05	34,626		3				34,626	U
139	0605456A	PAC-3/MSE Missile	05								Ü
140	0605457A	Army Integrated Air and Missile Defense (AIAMD)	05	336,420						336,420	U
141	0605625A	Manned Ground Vehicle	05								Ω
142	0605626A	Aerial Common Sensor	05								Ü
143	0605766A	National Capabilities Integration (MIP)	05	6,882						6,882	Ū
144	0605812A	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Ph	05	23,467						23,467	Ŭ
145	0605830A	Aviation Ground Support Equipment	05	6,930						6,930	Ū
146	0210609A	Paladin Integrated Management (PIM)	05	6,112						6,112	U
147	0303032A	TROJAN - RH12	05	4,431			1,200		1,200	5,631	U

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Line No	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	S e c -
148	0303267A	Auctioned Spectrum Relocation Fund	05	71,823				U
149	0303367A	Spectrum Access Research and Development	05	125,283				U
150	0304270A	Electronic Warfare Development	05	12,686	14,425	4,000	18,425	U
151	1205117A	Tractor Bears	05		5			U
	Syste	m Development & Demonstration		2,202,652	2,246,236	236,943	2,483,179	
152	0604256A	Threat Simulator Development	06	27,157	29,668		29,668	U
153	0604258A	Target Systems Development	06	16,163	19,114		19,114	U
154	0604759A	Major T&E Investment	06	65,059	96,738		96,738	U
155	0605103A	Rand Arroyo Center	06	20,014	20,648		20,648	U
156	0605301A	Army Kwajalein Atoll	06	200,393	227,345		227,345	U
157	0605326A	Concepts Experimentation Program	06	18,705	25,584		25,584	U
158	0605502A	Small Business Innovative Research	06	220,833				Ū
159	0605601A	Army Test Ranges and Facilities	06	273,275	293,712	14,134	307,846	U
160	0605602A	Army Technical Test Instrumentation and Targets	06	52,254	72,380		72,380	U
161	0605604A	Survivability/Lethality Analysis	06	33,069	38,567		38,567	U
162	0605606A	Aircraft Certification	06	4,571	4,663		4,663	U
163	0605702A	Meteorological Support to RDT&E Activities	06	8,104	6,923		6,923	U
164	0605706A	Materiel Systems Analysis	06	20,203	21,675		21,675	Ū
165	0605709A	Exploitation of Foreign Items	06	10,396	12,415		12,415	U

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Line I	Program Element Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	S e c
148 (0303267A	Auctioned Spectrum Relocation Fund	05								Ų
149 (0303367A	Spectrum Access Research and Development	05				y.				Ū
150	0304270A	Electronic Warfare Development	05	14,616				×		14,616	Ü
151	1205117A	Tractor Bears	05	17,928						17,928	Ü
	Syste	m Development & Demonstration		3,012,840			57,840		57,840	3,070,680	
152	0604256A	Threat Simulator Development	06	22,862				×		22,862	υ
153 (0604258A	Target Systems Development	06	13,902						13,902	U
154 (0604759A	Major T&E Investment .	06	102,901						102,901	U
155 (0605103A	Rand Arroyo Center	06	20,140						20,140	Ū
156	0605301A	Army Kwajalein Atoll	-06	246,663						246,663	Ŭ
157 (0605326A	Concepts Experimentation Program	06	29,820						29,820	U
158	0605502A	Small Business Innovative Research	06								U
159 (0605601A	Army Test Ranges and Facilities	06	307,588						307,588	U
160	0605602A	Army Technical Test Instrumentation and Targets	0(6	49,242		W.				49,242	U
161	0605604A	Survivability/Lethality Analysis	06	41,843						41,843	Ŭ
162	0605606A	Aircraft Certification	06	4,804	§					4,804	Ŭ
163 (0605702A	Meteorological Support to RDT&E Activities	06	7,238						7,238	U
164	0605706A	Materiel Systems Analysis	06	21,890						21,890	υ
165	0605709A	Exploitation of Foreign Items	06	12,684		8				12,684	U

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	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	S e c
166	0605712A	Support of Operational Testing	06	49,128	49,683		49,683	U
167	0605716A	Army Evaluation Center	06	52,265	55,899		55,899	U
168	0605718A	Army Modeling & Sim X-Cmd Collaboration & Integ	06	901	7,955		7,955	Ū
169	0605801A	Programwide Activities	06	61,060	51,811		51,811	U
170	0605803A	Technical Information Activities	06	25,991	33,309		33,309	υ
171	0605805A	Munitions Standardization, Effectiveness and Safety	06	48,335	65,526		65,526	υ
172	0605857A	Environmental Quality Technology Mgmt Support	06	3,673	2,129		2,129	Ü
173	0605898A	Army Direct Report Headquarters - R&D - MHA	06	48,312	49,877		49,877	U
174	0606001A	Military Ground-Based CREW Technology	06					U
175	0606002A	Ronald Reagan Ballistic Missile Defense Test Site	06					U
176	0303260A	Defense Military Deception Initiative	06		1,999		1,999	Ü
177	0909999A	Financing for Cancelled Account Adjustments	06	65				Ū
	RDT&E	Management Support		1,259,926	1,187,620	14,134	1,201,754	
178	0603778A	MLRS Product Improvement Program	07	21,202	9,658		9,658	U
179	0603813A	TRACTOR PULL	07	9,461	3,960		3,960	ŭ
180	0605024A	Anti-Tamper Technology Support	07		3,636		3,636	ט

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Program Line Element No Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	S e C
166 0605712A	Support of Operational Testing	06	51,040						51,040	U
167 0605716A	Army Evaluation Center	06	56,246						56,246	υ
168 0605718A	Army Modeling & Sim X-Cmd Collaboration & Integ	06	1,829	27	3				1,829	U
169 0605801A	Programwide Activities	06	55,060						55,060	U
170 0605803A	Technical Information Activities	06	33,934						33,934	U
171 0605805A	Munitions Standardization, Effectiveness and Safety	06	43,444			5			43,444	Ū
172 0605857A	Environmental Quality Technology Mgmt Support	06	5,087						5,087	Ū
173 0605898A	Army Direct Report Headquarters - R&D - MHA	06	54,679						54,679	U
174 0606001A	Military Ground-Based CREW Technology	06	7,916						7,916	U
175 0606002A	Ronald Reagan Ballistic Missile Defense Test Site	06	61,254						61,254	U
176 0303260A	Defense Military Deception Initiative	06	1,779						1,779	U
177 0909999A	Financing for Cancelled Account Adjustments	06					on of the control of the control of			Ū
RDT	E Management Support		1,253,845						1,253,845	
178 0603778A	MLRS Product Improvement Program	07	8,929				a		8,929	U
179 0603813A	TRACTOR PULL	07	4,014						4,014	υ
180 0605024A	Anti-Tamper Technology Support	07	4,094						4,094	U

Department of the Army FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

onal Authority 03 Nov 2017

Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	8 e c
181	0607131A	Weapons and Munitions Product Improvement Programs	07	5,678	14,511	5,100	19,611	U
182	0607133A	TRACTOR SMOKE	07	7,569	4,479		4,479	U
183	0607134A	Long Range Precision Fires (LRPF)	07		37,757		37,757	U
184	0607135A	Apache Product Improvement Program	07	62,964	64,410		64,410	U
185	0607136A	Blackhawk Product Improvement Program	07	64,011	46,742		46,742	U
186	0607137A	Chinook Product Improvement Program	07	31,122	91,803		91,803	U
187	0607138A	Fixed Wing Product Improvement Program	07	1,105	796		796	U
188	0607139A	Improved Turbine Engine Program	07	49,137	116,049		116,049	U
189	0607140A	Emerging Technologies from NIE	07	2,383	2,368		2,368	U
190	0607141A	Logistics Automation	07	1,318	1,735		1,735	U
191	0607142A	Aviation Rocket System Product Improvement and Development	07					U
192	0607143A	Unmanned Aircraft System Universal Products	07					U
193	0607665A	Family of Biometrics	07	7,179	12,092		12,092	U
194	0607865A	Patriot Product Improvement	07	87,537	49,466		49,466	υ
195	0202429A	Aerostat Joint Project - COCOM Exercise	07	10,171	6,397		6,397	U
196	0203728A	Joint Automated Deep Operation Coordination System (JADOCS)	07	30,669	30,442		30,442	U
197	0203735A	Combat Vehicle Improvement Programs	07	382,176	303,884	10,000	313,884	U

Department of the Army FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

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Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	S e c
181	0607131A	Weapons and Munitions Product Improvement Programs	07	15,738						15,738	ט
182	0607133A	TRACTOR SMOKE	07	4,513						4,513	Ū
183	0607134A	Long Range Precision Fires (LRPF)	07	102,014						102,014	U
184	0607135A	Apache Product Improvement Program	07	59,977						59,977	ט
185	0607136A	Blackhawk Product Improvement Program	07	34,416						34,416	U
186	0607137A	Chinook Product Improvement Program	07	194,567						194,567	U
187	0607138A	Fixed Wing Product Improvement Program	07	9,981	41					9,981	U
188	0607139A	Improved Turbine Engine Program	07	204,304						204,304	U
189	0607140A	Emerging Technologies from NIE	07	1,023						1,023	U
190	0607141A	Logistics Automation	07	1,504						1,504	Ū
191	0607142A	Aviation Rocket System Product Improvement and Development	07	10,064	21					10,064	U
192	0607143A	Unmanned Aircraft System Universal Products	07	38,463						38,463	U
193	0607665A	Family of Biometrics	07	6,159						6,159	ΰ
194	0607865A	Patriot Product Improvement	07	90,217						90,217	U
195	0202429A	Aerostat Joint Project - COCOM Exercise	07	6,749						6,749	Ŭ
196	0203728A	Joint Automated Deep Operation Coordination System (JADOCS)	07	33,520						33,520	Ū
197	0203735A	Combat Vehicle Improvement Programs	07	343,175						343,175	U

Department of the Army FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

03 Nov 2017

Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number		Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	S e c
198	0203740A	Maneuver Control System	07	14,864	4,030		4,030	U
199	0203743A	155mm Self-Propelled Howitzer Improvements	07					U
200	0203744A	Aircraft Modifications/Product Improvement Programs	07	*	33,677	8	33,677	U
201	0203752A	Aircraft Engine Component Improvement Program	07	349	259		259	Ū
202	0203758A	Digitization	07	4,188	6,480		6,480	Ü
203	0203801A	Missile/Air Defense Froduct Improvement Program	07	3,029	5,120	20,000	25,120	Ū
204	0203802A	Other Missile Product Improvement Programs	07	49,191	7,487	1,080	8,567	Ū
205	0203808A	TRACTOR CARD	07	34,686	20,333		20,333	υ
206	0205402A	Integrated Base Defense - Operational System Dev	07	10,324		3,450	3,450	υ
207	0205410A	Materials Handling Equipment	07	386	124		124	U
208	0205412A	Environmental Quality Technology - Operational System Dev	07					ט
209	0205456A	Lower Tier Air and Missile Defense (AMD) System	07	61,653	63,850		63,858	Ū
210	0205778A	Guided Multiple-Launch Rocket System (GMLRS)	07	36,032	22,033		22,033	Ü
211	0208053A	Joint Tactical Ground System	07	28,015	12,649		12,649	ט
213	0303028A	Security and Intelligence Activities	07	13,156	11,619	4,100	15,719	U
214	0303140A	Information Systems Security Program	07	31,032	38,263		38,263	υ

Department of the Army FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

03 Nov 2017

Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	s e c
198	0203740A	Maneuver Control System	07	6,639						6,639	U
	9 0203743A	155mm Self-Propelled Howitzer Improvements	07	40,784						40,784	Ū
200	0203744A	Aircraft Modifications/Product Improvement Programs	07	39,358						39,358	U
201	L 0203752A	Aircraft Engine Component Improvement Program	07	145						145	υ
202	0203758A	Digitization	07	4,803						4,803	บ
203	3 0203801A	Missile/Air Defense Product Improvement Program	07	2,723			15,000		15,000	17,723	υ
204	0203802A	Other Missile Product Improvement Programs	07	5,000						5,000	υ
205	0203808A	TRACTOR CARD	07	37,883						37,883	U
206	0205402A	Integrated Base Defense - Operational System Dev	07			*!					ū
207	0205410A	Materials Handling Equipment	07	1,582						1,582	U
208	0205412A	Environmental Quality Technology - Operational System Dev	07	195				×		195	Ŭ ,
209	0205456A	Lower Tier Air and Missile Defense (AMD) System	07	78,926						78,926	Ū
210	0205778A	Guided Multiple-Launch Rocket System (GMLRS)	07	102,807						102,807	Ū
211	0208053A	Joint Tactical Ground System	07								U
213	0303028A	Security and Intelligence Activities	s 07	13,807						13,807	U
214	0303140A	Information Systems Security Program	n 07	132,438						132,438	U

Department of the Army FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

03 Nov 2017

Appropriation: 2040A Research, Development, Test & Eval, Army

No	Program Element Number	Item	Act	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	s e c
7.7				**************************************				-
215	0303141A	Global Combat Support System	07	25,304	27,210		27,210	Ū
216	0303142A	SATCOM Ground Environment (SPACE)	07	9,045	18,806		18,806	U
217	030315 0 A	WWMCCS/Global Command and Control System	07	6,810	4,716		4,716	υ
220	0305172A	Combined Advanced Applications	07					U
221	0305179A	Integrated Broadcast Service (IBS)	07	750				υ
222	0305204A	Tactical Unmanned Aerial Vehicles	07	15,370	8,218		8,210	U
223	0305206A	Airborne Reconnaissance Systems	07	20,725	11,799		11,799	σ
224	0305208A	Distributed Common Ground/Surface Systems	07	25,592	32,284		32,284	σ
225	0305219A	MQ-1C Gray Eagle UAS	07	22,285	13,470		13,470	U
226	0305232A	RQ-11 UAV	07		1,613		1,613	υ
227	0305233A	RQ-7 UAV	07	11,797	4,597		4,597	Ū
228	0307665A	Biometrics Enabled Intelligence	07			8,854	8,854	σ
229	0310349A	Win-T Increment 2 - Initial Networking	07	3,649	4,865		4,865	U
230	0708045A	End Item Industrial Preparedness Activities	07	58,503	62,257		62,257	Ū
231	1203142A	SATCOM Ground Environment (SPACE)	07					U
232	1208053A	Joint Tactical Ground System	07					σ
9999	999999999	Classified Programs		4,536	4,625		4,625	Ū
	Opera	tional Systems Development		1,264,953	1,220,577	52,584	1,273,161	
							*	

Department of the Army FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

03 Nov 2017

Appropriation: 2040A Research, Development, Test & Eval, Army

Line Ele No Nu	ogram ement mber	Item	Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	S e C
215 03	03141A	Global Combat Support System	07	64,370						64,370	υ
216 03	03142A	SATCOM Ground Environment (SPACE)	07								U
217 03	03150A	WWMCCS/Global Command and Control System	07	10,475						10,475	Ū
220 03	05172A	Combined Advanced Applications	07	1,100						1,100	Ü
221 03	05179A	Integrated Broadcast Service (IBS)	07	6							U
222 03	05204A	Tactical Unmanned Aerial Vehicles	07	9,433			7,492		7,492	16,925	Ü
223 03	05206A	Airborne Reconnaissance Systems	07	5,080			15,000		15,000	20,080	α
224 03	05208A	Distributed Common Ground/Surface Systems	07	24,700						24,700	Ü
225 03	05219A	MQ-1C Gray Eagle UAS	07	9,574						9,574	Ū
226 030	05232A	RQ-11 UAV	07	2,191						2,191	Ū
227 03	05233A	RQ-7 UAV .	07	12,773						12,773	Ü
228 03	07665A	Biometrics Enabled Intelligence	07	2,537			6,036		6,036	8,573	Ü
229 03		Win-T Increment 2 - Initial Networking	07	4,723						4,723	Ü
230 07	08045A	End Item Industrial Preparedness Activities	07	60,877						60,877	υ
231 120	03142A	SATCOM Ground Environment (SPACE)	07	11,959						11,959	ŭ
232 12	08053A	Joint Tactical Ground System	07	10,228						10,228	U
9999 999	99999999	Classified Programs		7,154						7,154	Ū
	Operat	tional Systems Development		1,877,685			43,528		43,528	1,921,213	
											i

Department of the Army FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

03 Nov 2017

Appropriation: 2040A Research, Development, Test & Eval, Army

	Program Element Number	Item		1 ot	FY 2016 Base + OCO	FY 2017 Base Enactment	FY 2017 OCO Enactment	FY 2017 Total (Base + OCO)	s e
No	HOURSEL	ı cem		Act	base + OCO	Enacemene	Enactment	(base + OCO)	C
						********			-
Tota	l Research,	Development,	Test & Eval, Army		7,861,744	8,330,016	342,356	8,672,372	12

Department of the Army FY 2018 President's Budget Amendment Exhibit R-1 FY 2018 President's Budget Amendment Total Obligational Authority (Dollars in Thousands)

03 Nov 2017

Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item			Act	FY 2018 Base Request	FY 2018 June Amendment Base	FY 2018 Amendment Emergency	FY 2018 OCO Request	FY 2018 Amendment OCO	FY 2018 Total OCO	FY 2018 Grand Total	S e c
		****											-
Tota	l Research,	Development,	Test & Eval,	Army		9,425,440		20,700	119,368		119,368	9,565,508	

Army • Budget Amendment FY 2018 • RDT&E Program

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Exhibit R-2, RDT&E Budget Item Justification: PB Amended 2018 Army

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

Date: November 2017

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2040: Research, Development, Test & Evaluation, Army I BA 3: Advanced

PE 0603009A / TRACTOR HIKE

Technology Development (ATD)

COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	9.002	21.374	40,552	-	40,552	20.631	21.041	21.459	21.898	-	-
B18: <i>DB18</i>	-	9.002	21.374	16.642	-	16.642	8.704	8.879	9.055	9.240	-	-
FH1: TRACTOR HIKE	-	0.000	0.000	23,910	-	23,910	11.927	12.162	12.404	12.658	-	-

A. Mission Description and Budget Item Justification

The details of this program are reported in accordance with Title 10, United States Code, Section 119(a)(1).

B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	7.502	8.074	8.650	-	8.650
Current President's Budget	9.002	21.374	40,552	-	40,552
Total Adjustments	1.500	13.300	31,902	-	31,902
 Congressional General Reductions 	-	-			
 Congressional Directed Reductions 	-	-			
 Congressional Rescissions 	-	-			
Congressional Adds	-	-			
 Congressional Directed Transfers 	-	-			
Reprogrammings	1.500	-			
SBIR/STTR Transfer	-	-			
 Adjustments to Budget Years FY2018 Missile Defeat and Defense 	0.000	13.300	19.902	-	31,902
Enhancements			12.000		

Change Summary Explanation

Fiscal Year (FY) 2016 - Classified Program funds increase.

FY17 - Classified Program funds increase.

The FY2018 Missile Defeat and Defense Enhancements (MDDE) Budget Amendment: \$12.000 million is required to address emergency warfighting requirements. Additional details are available at a higher classification level.

PE 0603009A: TRACTOR HIKE

UNCLASSIFIED

Army Page 1 of 3 R-1 Line #36

Exhibit R-2A, RDT&E Project Ju	stification:	FY 2018 A	rmy							Date: May	2017	
Appropriation/Budget Activity		R-1 Program Element (Number/Name) Project (Number/Name)										
2040 / 3					PE 0603009A / TRACTOR HIKE B18 / DB18							
COST (\$ in Millions)	Prior			FY 2018	FY 2018	FY 2018					Cost To	Total
COST (\$ in Millions) Years FY 2016 FY 2017 Base				oco	Total	FY 2019	FY 2020	FY 2021	FY 2022	Complete	Cost	
B18: <i>DB18</i>	-	9.002	21.374	16.642	-	16.642	8.704	8.879	9.055	9.240	-	-

A. Mission Description and Budget Item Justification

The details of this program are reported in accordance with Title 10, United States Code, Section 119(a)(1)

PE 0603009A: TRACTOR HIKE

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army Date: May 2017												
Appropriation/Budget Activity 2040 / 3	` , , ,				, ,	(Number/Name) RACTOR HIKE						
				FY 2018			FY 2019	FY 2020	-		Cost To Complete	Total Cost
FH1: TRACTOR HIKE	-	0.000	0.000	23.910	-	23.910	11.927	12.162	12.404	12.658	-	-

A. Mission Description and Budget Item Justification

The details of this program are reported in accordance with Title 10, United States Code, Section 119(a)(1).

PE 0603009A: TRACTOR HIKE

Army Page 3 of 3

R-1 Line #36

Exhibit R-2, RDT&E Budget Item Justification: PB Amended 2018 Army	Date: November 2017
Appropriation/Budget Activity	R-1 Program Element (Number/Name)
2040: Research, Development, Test & Evaluation, Army I BA 4: Advanced	PE 0603327A I Air and Missile Defense Systems Engineering
Component Development & Prototypes (ACD&P)	

	71 (/										
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element		0.000	14.200	42.649	15.000	57.649	37.995	27.039	30.168	35.070	Continuing	Continuing
FG9: Air and Missile Defense (AMO) Electronic Warfare		0.000	14.200	42.649	15.000	57.649	37.995	27.039	30.168	35.070	Continuing	Continuing

Note

Note: FY2018 funding in the amount of \$5.939M was realigned from this Program Element (PE) to PE 0604741A, Project 126.

A. Mission Description and Budget Item Justification

Funding in this program supports efforts to assess Army Air and Missile Defense (AMO) performance and system vulnerabilities to threats from Cyber and Electromagnetic Activities (CEMA). Army AMO sensors, Integrated Air and Missile Defense (IAMD) Battle Command System (IBCS) Command and Control (C2), Radio Frequency (RF) data and voice networks will be assessed against current and postulated threat systems and techniques. Potential solutions developed by the Army, other Services, and Defense agencies (for example Missile Defense Agency) to close identified gaps will be demonstrated and assessed in live and simulated CEMA environments. Assessment events will be conducted approximately every two years. Analysis of results and implementation of potential solutions will occur between events using system-specific funding. The proposed solutions will then be assessed at the next event after implementation.

Included in this line are funds to plan and execute periodic CEMA activities with Army AMD systems, to include other Service and other Agency AMO systems as appropriate. Upon completion of GEMA demonstration analyses, create concepts for mitigating Army AMO sensor, C2, and RF data link vulnerabilities. Efforts in this program will also develop tools for use by Army AMD systems to improve overall system performance in contested environments, to include effects-based GEMA Modeling and Simulation (M&S) to assess Army AMD GEMA concepts in Hardware-In-The-Loop (HWIL) environment. Collaboration is required with United States Strategic Command (USSTRATCOM) Joint Electromagnetic Preparedness for Advanced Combat (JEPAC) to evaluate, modify, and field existing Army AMD EP Tactics, Techniques, and Procedures (TTPs) in a Joint environment. Additionally, there will be continual interface with intelligence communities to maintain cognizance of emerging CEMA threats and incorporate these threats in future CEMA demonstrations. An output from these activities will be development of a time-phased roadmap that identifies the investments needed to improve the CEMA capabilities of Army AMO sensors, C2, and RF data and voice networks.

Funds in this line will also be used to transition the Army Low-Cost Portable Surveillance (ALPS) sensor from Science and Technology (S&T) into an emerging Program of Record (PoR). Initially, prototype systems will be provided to meet a Combatant Command identified need and to conduct an operational assessment. This program will also develop and integrate ALPS into the Army Integrated Air & Missile Defense (AIAMD) Battle Command System (IBCS) to improve the GEMA posture of the Army's AMO architecture. The objectives of this effort are to prove component and subsystem maturity in a system-of-systems environment and to reduce subsequent PoR integration risk.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB Amende	ed 2018 Army	Date: November 2017								
Appropriation/Budget Activity 2040: Research, Development, Test& Evaluation, Army IBA Component Development & Prototypes (ACD&P)	4: Advanced	•	ement (Number/Name) Air and Missile Defense							
B. Program Change Summary (\$ in Millions) Previous President's Budget	FY 2016 14.200	FY 2017 48.949	<u>FY 2018 Base</u> 35.795	<u>FY2018OCO</u>	<u>FY 2018 T</u> otal 35,795					
Current President's Budget Total Adjustments	0.000 -14.200	14.200 -34.749	42.649 6.854	15.000 15.000	57.649 21.854					
Congressional General ReductionsCongressional Directed Reductions	-	-								
Congressional RescissionsCongressional Adds	-	-								
Congressional Directed TransfersReprogrammings	-	- -								
SBIR/STTR Transfer	-	-								
 Adjustments to Budget Years 	-14 200	-34.749	6.854	15.000	21.854					

Change Summary Explanation

FY2017 funding in the amount of \$14.200 million is included in the March 2017 Request for Additional Appropriations.

FY2018 base funding in the amount of \$5.939 million was realigned from Program Element (PE) 0604741A, Project 126. Additionally, base funding increased by \$13.010 million for ALPS development/integration and \$15.000 million for GEMA activities.

FY2018 Overseas Contingency (OCO) fund in the amount of \$15.000 million support a Combatant Command identified need for ALPS and to continue the operational assessment started with FY17 funding in the Request for Additional Appropriations.

The FY2018 Missile Defeat and Defense Enhancements (MDDE) Budget Amendment: \$8.700 million is required to address emergency warfighting requirements. This funding will address an Operational Needs Statement (Classified) by procuring and deploying ALPS prototype systems.

R-1 Line #55