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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force										Date: February 2019		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0605278F I HC/MC-130 Recap RDT&E							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	0.000	30.784	16.174	17.218	0.000	17.218	24.750	46.462	47.696	6.489	52.162	241.735
675006: HC/MC-130 Recap	0.000	30.784	16.174	17.197	0.000	17.197	5.750	22.601	43.601	1.300	0.000	137.407
675910: Block 8.X	0.000	0.000	0.000	0.021	0.000	0.021	19.000	23.861	4.095	5.189	52.162	104.328
Program MDAP/MAIS Code: 257												
A. Mission Description and Budget Item Justification												
HC/MC-130 Recapitalization ("Recap") produces and modifies HC/MC-130J aircraft to replace USAF's aging legacy Combat Rescue HC-130P/N and Special Operations MC-130E/P/H aircraft, which are experiencing airworthiness, maintainability and operations limitations. The Recap program incorporates production line modifications to the C-130J common/baseline configuration to convert them to the HC/MC model, and also funds post-production modifications to add special mission systems required for behind-enemy-line operations required of Combat Rescue and Special Operations aircraft.												
The RDT&E portion of the Recap program funds engineering support and studies to conduct rapid development activities, and develops major "block" upgrades to deliver specific increments of capability in common configurations across the fielded fleet. Currently, Block 7.0/8.1 leverages the baseline C-130J (PE 0401132F) Block 7.0/8.1 upgrade, but funds unique HC/MC-130J integration requirements. The Block 7.0/8.1 project will deliver Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM) capabilities required for compliance with evolving international standards, thereby allowing HC/MC-130J aircraft to operate in international airspace. It also incorporates capabilities such as Link-16, a new Flight Management System (FMS), Civil GPS Navigation and Data Link, Identification Friend or Foe (IFF) Transponder Mode-5, and Automatic Dependent Surveillance-Broadcast Out (ADS-B Out). To meet long-lead item requirements, procurement of some Block 7.0/8.1 kit items begins in FY21.												
In 2018 the USAF significantly revamped its HC/MC-130J Block 7.0/8.1. upgrade strategy. We de-scoped the MC-130J from the current Block 7.0/8.1 focus to allow the MC-130J to prioritize other (SOCOM-funded) modifications while allowing the USAF to move forward with Block 7.0/8.1 on the HC-130J. Block 8.X, which is now broken out as its own project, will then integrate SOCOM-funded AC/MC-130J capabilities with Block 7.0/8.1. Costs are based on an initial rough order of magnitude estimate and will be revised as the Block 8.X acquisition strategy matures. Both Block 7.0/8.1 and 8.X RDT&E projects include development, trial kit installs and Development and Operational Testing (DT/OT).												
FY2019 Plans: The HC-130J Block 7.0/8.1 trial kit install effort occur.												
FY20 Plans: Funding for HC-130J Block 7.0/8.1 trial kit install.												
In addition to the MC-130J de-scope, the USAF has also decoupled the IFF Mode 5 and ADS-B Out portions of Block 7.0/8.1, to accelerate those requirements and comply with 2020 mandates.												

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The USAF also added a budget line to comply with a new Mobile User Objective System (MUOS) Satellite Communications (SATCOM) mandate; funding for that development begins in FY22, with production deliveries required by FY23.						
This program element may include necessary civilian pay expenses required to manage, execute, and deliver HC/MC-130J weapon system capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F. The program may also include any Contractor Manpower Equivalent (CME)/A&AS support deemed necessary to support the program objectives.						
The HC/MC RDT&E permits the initiation and employment of rapid acquisition authorities to respond to emerging threats and requirements as needed.						
As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.						
This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.						
B. Program Change Summary (\$ in Millions)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget		38.579	32.574	4.817	0.000	4.817
Current President's Budget		30.784	16.174	17.218	0.000	17.218
Total Adjustments		-7.795	-16.400	12.401	0.000	12.401
• Congressional General Reductions		0.000	0.000			
• Congressional Directed Reductions		-5.600	-16.400			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		0.000	0.000			
• Congressional Directed Transfers		0.000	0.000			
• Reprogrammings		-1.000	0.000			
• SBIR/STTR Transfer		-1.195	0.000			
• Other Adjustments		0.000	0.000	12.401	0.000	12.401
Change Summary Explanation						
FY 2018 was reduced by \$7.795M. \$5.6M was a Congressional mark for "Block 8 development ahead of need". \$1.0M was reprogrammed for other priorities. \$1.195M was a SBIR transfer.						

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3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development	PE 0605278F I HC/MC-130 Recap RDT&E	
FY 2019 was reduced by \$16.4M by a Congressional mark for "Block 8.1 program delays".		
FY 2020 was increased by \$12.401M due to previous delays for Block 8.1 phasing. This increase is required to stay on schedule.		

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force										Date: February 2019		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0605278F / HC/MC-130 Recap RDT&E				Project (Number/Name) 675006 / HC/MC-130 Recap			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
675006: HC/MC-130 Recap	0.000	30.784	16.174	17.197	0.000	17.197	5.750	22.601	43.601	1.300	0.000	137.407
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

HC/MC-130 Recapitalization will replace and augment the aging USAF fleets of combat rescue HC-130P/N and special operations MC-130E/P/H aircraft which are experiencing airworthiness, maintainability and operational limitations.

The HC/MC RDT&E effort integrates Block 7.0/8.1 into a HC-130J, provides program capability updates, studies, and integration with other HC, MC and AC unique modifications. The HC/MC Block 7.0/8.1 program follows the same "Block Upgrade" strategy being used in the C-130J program (PE 0401132F).

The USAF will be fielding the IFF Mode 5 and ADS-B Out portions of Block 7.0/8.1 ahead of the remaining 36 capabilities in order to comply with the 2020 mandates.

The Block 7.0/8.1 fleet modification program begins in FY 2019.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver HC/MC-130 Recap Program weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605278F.

HC/MC RDT&E permits the initiation and employment of rapid acquisition authorities to respond to emerging threats and requirements as needed.

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

	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<b>Title:</b> HC-130 Recap Continuous Improvement Program (CIP)	3.662	2.560	1.972
<b>Description:</b> Recurring Software and hardware enhancements to address evolving requirements for Special Operations Forces and Personnel Recovery missions. These enhancements will be incorporated in both production and fielded aircraft. These enhancements will include, but are not limited to, parallel operational flight program (OFP) updates. FY18 funding amount has increased due to cost sharing with SOCOM for an Expanded Intercommunication System (ICS) effort.			
<b>FY 2019 Plans:</b> Support continuous improvement cycle of both hardware and software of multiple onboard systems, some of which may impact the aircraft OFP with programs already in work.			
<b>FY 2020 Plans:</b> Funding continued to support continuous improvement cycle of both hardware and software of multiple onboard systems.			
<b>FY 2019 to FY 2020 Increase/Decrease Statement:</b>			

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force									Date: February 2019		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0605278F / HC/MC-130 Recap RDT&E				Project (Number/Name) 675006 / HC/MC-130 Recap			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2018	FY 2019	FY 2020
FY20 decrease attributed to ramping down the Continuous Improvement Program.											
<b>Title:</b> HC-130 Block 7.0/8.1  <b>Description:</b> Combined software/hardware upgrade for Block 7.0/8.1. Block 7.0/8.1 includes, but is not limited to: Link 16, a new Flight Managment System (FMS), Civil Global Positioning System (GPS) Navigation, a Special Mission Processor Interface (SMP-I), Identification Friend or Foe (IFF) Mode 5, Civil Data Link, Automatic Dependent Surveillance-Broadcast Out (ADS-B-Out)and the CSO 2.5.  <b>FY 2019 Plans:</b> The HC-130J Block 7.0/8.1trial kit install efforts occur.  <b>FY 2020 Plans:</b> Funding for combined software/hardware upgrade for Block 8.1 on HC-130J TKI.  <b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> FY20 increase attributed to additional software/hardware integration on the HC-130J TKI kit.									26.634	12.988	14.909
<b>Title:</b> HC-130J Government Test Support  <b>Description:</b> Test and evaluation planning, conduct, and support for developmental and operational testing  <b>FY 2019 Plans:</b> Funding will support developmental and operational testing including Block 7.0/8.1 DT&E  <b>FY 2020 Plans:</b> Funding will support developmental and operational testing including Block 7.0/8.1 DT&E  <b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> FY 20 decrease attributed to phasing down of the test program.									0.488	0.626	0.316
Accomplishments/Planned Programs Subtotals									30.784	16.174	17.197
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• APAF 05 Line Item HCMC00: HC/MC-130 Modifications	112.054	125.654	51.482	-	51.482	38.515	20.099	4.375	4.537	385.000	741.716
• APAF 02 Line Item C130JH: HC-130J	281.502	188.837	0.000	-	0.000	0.000	0.000	0.000	5.000	0.000	475.339

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force										Date: February 2019	
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0605278F / HC/MC-130 Recap RDT&E				Project (Number/Name) 675006 / HC/MC-130 Recap			
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
			<u>FY 2020</u>	<u>FY 2020</u>	<u>FY 2020</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>Complete</u>	<u>Total Cost</u>
• APAF 02 Line Item C-130JM: MC-130J	1,009.378	945.879	911.207	-	911.207	438.435	390.566	120.466	27.612	20.000	3,863.543
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
Lockheed Martin is the primary contractor for Research and Development work in support of the HC/MC-130J Recap program. Block 7.0/8.1 strategy takes the common core Block 7.0/8.1 developed in the C-130J program and integrates it into the HC-130J. Block 7.0/8.1 will also integrate with HC- unique mods as well as other SOF peculiar mods. The C-130J ADS-B Out program includes all C-130J variants.											
Development work done to date on the HC-130J Recap program has been on Cost Plus Award Fee (CPAF) and Cost Plus Incentive Fee (CPIF) type contracts.											
<b>E. Performance Metrics</b>											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force												Date: February 2019			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0605278F / HC/MC-130 Recap RDT&E				Project (Number/Name) 675006 / HC/MC-130 Recap					
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HC/MC-130 Recap Continuous Improvement Program (CIP)	SS/CPIF	Lockheed Martin : Marietta, GA	0.000	3.662	Mar 2018	2.560	May 2019	1.972	Mar 2020	-		1.972	0.000	8.194	1.198
HC-130 Recap Block 7.0/8.1	SS/CPIF	Lockheed Martin : Marietta, GA	0.000	26.634	May 2018	12.988	Apr 2019	14.909	Oct 2019	-		14.909	18.391	72.922	81.441
Subtotal			0.000	30.296		15.548		16.881		-		16.881	18.391	81.116	N/A
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HC-130J 7.0/8.1 Government Support Test	RO	46th Test Wing: EAFB, FL : TBD	0.000	0.488	Jan 2019	0.626	Apr 2019	0.316	Apr 2020	-		0.316	0.000	1.430	-
Subtotal			0.000	0.488		0.626		0.316		-		0.316	0.000	1.430	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	30.784		16.174		17.197		-		17.197	18.391	82.546	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force																Date: February 2019			
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)			
3600 / 7								PE 0605278F / HC/MC-130 Recap RDT&E								675006 / HC/MC-130 Recap			

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
HC/MC-130 Recap Development																												
HC-130J Government Testing																												
HC-130 RECAP Block 7.0/8.1 Development																												
Continuous Improvement Program (CIP)																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2020 Air Force		<b>Date:</b> February 2019
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0605278F / <i>HC/MC-130 Recap RDT&amp;E</i>	<b>Project (Number/Name)</b> 675006 / <i>HC/MC-130 Recap</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>HC/MC-130 Recap Development</i></b>				
HC-130J Government Testing	1	2018	4	2023
HC-130 RECAP Block 7.0/8.1 Development	3	2018	2	2021
Continuous Improvement Program (CIP)	2	2020	2	2021

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Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0605278F / HC/MC-130 Recap RDT&E				Project (Number/Name) 675910 / Block 8.X			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
675910: Block 8.X	0.000	0.000	0.000	0.021	0.000	0.021	19.000	23.861	4.095	5.189	52.162	104.328
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**  
 Integrates Block 7.0/8.1 into MC-130J and AC-130J; provides program capability updates, studies, and integration with other MC and AC unique modifications.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver HC/MC-130 Recap Program weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605278F.

MC/AC RDT&E permits the initiation and employment of rapid acquisition authorities to respond to emerging threats and requirements as needed.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2018	FY 2019	FY 2020
<b>Title:</b> MC/AC Block 8.X <b>Description:</b> Combined software/hardware upgrade for Block 8.1 to add capabilities to integrate onto MC and AC beginning in FY21 and follow-on upgrades. <b>FY 2019 Plans:</b> N/A <b>FY 2020 Plans:</b> Funding to begin 4th QTR for integration of Block 7.0/8.1 onto AC-130J aircraft. <b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Funding for Block 8.X begins in FY 20.	-	0.000	0.021
<b>Accomplishments/Planned Programs Subtotals</b>	-	0.000	0.021

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

**Remarks**

**D. Acquisition Strategy**  
 Lockheed Martin is the primary contractor for Research and Development work in support of the Block 8.X program. Block 8.X strategy takes the common core Block 7.0/8.1 developed in the C-130J program and integrates it into the AC/MC 130J configurations beginning in FY21.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2020 Air Force		<b>Date:</b> February 2019
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0605278F / HC/MC-130 Recap RDT&E	<b>Project (Number/Name)</b> 675910 / Block 8.X

## E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2020 Air Force												<b>Date:</b> February 2019			
<b>Appropriation/Budget Activity</b> 3600 / 7						<b>R-1 Program Element (Number/Name)</b> PE 0605278F / HC/MC-130 Recap RDT&E				<b>Project (Number/Name)</b> 675910 / Block 8.X					

  

<b>Product Development (\$ in Millions)</b>				<b>FY 2018</b>		<b>FY 2019</b>		<b>FY 2020 Base</b>		<b>FY 2020 OCO</b>		<b>FY 2020 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
MC/AC Block 7.0/8.1	C/CPAF	Not specified. : TBD	0.000	0.000		0.000		0.021	Jul 2020	-		0.021	0.000	0.021	-
<b>Subtotal</b>			0.000	0.000		0.000		0.021		-		0.021	0.000	0.021	N/A

  

	<b>Prior Years</b>	<b>FY 2018</b>		<b>FY 2019</b>		<b>FY 2020 Base</b>		<b>FY 2020 OCO</b>		<b>FY 2020 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	0.000	0.000		0.000		0.021		-		0.021	0.000	0.021	N/A

  

**Remarks**

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force										Date: February 2019									
Appropriation/Budget Activity										R-1 Program Element (Number/Name)					Project (Number/Name)				
3600 / 7										PE 0605278F / HC/MC-130 Recap RDT&E					675910 / Block 8.X				

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
Block 8.X																												
Block 8.X development for AC/MC-130																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0605278F / HC/MC-130 Recap RDT&E	Project (Number/Name) 675910 / Block 8.X

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Block 8.X				
Block 8.X development for AC/MC-130	4	2020	4	2024