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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy **Date:** March 2014

Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604216N / Multi-Mssn Helicopter Upgrade Dev
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	1,518.556	6.035	17.565	11.434	-	11.434	22.908	4.374	4.513	2.770	Continuing	Continuing
1707: MH-60R Development	1,518.556	6.035	17.565	11.434	-	11.434	22.908	4.374	4.513	2.770	Continuing	Continuing

MDAP/MAIS Code: 191

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This Program Element includes funding for the development and support of future systems and improvements to current systems of the MH-60R. The MH-60R Multi-Mission Helicopter provides battle group protection and adds significant capability in coastal littorals and regional conflicts. The MH-60R represents a significant avionics improvement to the H-60 series helicopters by enhancing primary mission areas of Undersea Warfare and Surface Warfare which includes the Fast Attack Craft/Fast In-shore Attack Craft (FAC/FIAC) threat response capabilities. Secondary mission areas include Search and Rescue, Vertical Replenishment, Naval Surface Fire Support, logistics support, personnel transport and Medical Evacuation.

FY 2015 budget request funds Advanced Precision Kill Weapon System (APKWS) and Helicopter Infrared Suppression System (HIRSS) development, government engineering, logistics, and testing.

B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	6.866	17.565	10.831	-	10.831
Current President's Budget	6.035	17.565	11.434	-	11.434
Total Adjustments	-0.831	-	0.603	-	0.603
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.656	-			
• Program Adjustments	-	-	1.000	-	1.000
• Rate/Misc Adjustments	-	-	-0.397	-	-0.397
• Congressional General Reductions Adjustments	-0.175	-	-	-	-

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<p><u>Change Summary Explanation</u></p> <p>Schedule: An Automatic Radar Periscope Detection and Discrimination (ARPDD) Operational Test (OT) period was conducted from August to October 2012. Multiple data points were recorded with no major deficiencies identified. Testing was determined to be incomplete due to the inability of the target to replicate the test specification requirements. A second OT period was conducted in 4th quarter FY 2013. Analysis has been completed and ARPDD achieved Initial Operational Capability (IOC) in January 2014.</p> <p>Technical: The gearbox corrosion upgrade was cancelled due to higher than anticipated costs. Gearbox corrosion is being addressed by a joint effort with the Army (Navy funded with Aircraft Procurement, Navy).</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy										Date: March 2014		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604216N / Multi-Mssn Helicopter Upgrade Dev				Project (Number/Name) 1707 / MH-60R Development			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
1707: MH-60R Development	1,518.556	6.035	17.565	11.434	-	11.434	22.908	4.374	4.513	2.770	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		
# The FY 2015 OCO Request will be submitted at a later date.												
A. Mission Description and Budget Item Justification												
The primary mission areas of the MH-60R include Anti-Submarine Warfare and Surface Warfare which includes the Fast Attack Craft/Fast In-shore Attack Craft (FAC/ FIAC) threat response capabilities. Secondary mission areas include Search and Rescue, Vertical Replenishment, Naval Surface Fire Support, logistics support, personnel transport and Medical Evacuation. The MH-60R is Post-Milestone III; executing Pre-Planned Product Improvements (P3I) to Air Vehicle and Mission systems. P3I includes upgrades to communication, navigation, Identification Friend or Foe (IFF), Multi-Spectral Targeting System/Forward Looking Infrared Radar, Automatic Radar Periscope Detection and Discrimination (ARPDD), weapons, data link, safety, maintenance, airframe and mission planning systems. Advanced Precision Kill Weapon System (APKWS) and Helicopter Infrared Suppression System (HIRSS) integration will support Surface Warfare and Maritime Interdiction Operations by providing Forward Firing Weapons, which includes Rockets and Anti-swarm weapons, by addressing the FAC/FIAC Threat. Infrared Suppression systems reduce susceptibility to Infrared missile threats and have been incorporated onto other H-60 Type/Model/Series, including MH-60S and HH-60H. Reducing MH-60R vulnerability to IR threats addresses the strategic goal of long-term sustainment of the force. MH-60R aircraft currently have no system for engine exhaust suppression. Instrument Landing System (ILS) provides precision approach capability ashore and to supplement currently available Precision Approach Radar (PAR) controlled approaches. The PAR is the only precision approach available to the MH-60R and is slated to be replaced by Joint Precision Approach Landing System (JPALS). Additionally, Very high frequency Omnidirectional Radio range (VOR) navigation capability included with the Instrument Landing System (ILS) system provides instrument navigation after disestablishment of Tactical Air Command and Navigation (TACAN) system in the Continental United States.												
FY15 budget request funds APKWS and HIRSS development, government engineering, logistics, and testing.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2013	FY 2014	FY 2015	
Title: Avionics H/W and S/W Development									0.783	12.500	7.694	
									Articles: -	-	-	
Description: Supports aircraft integration, problem investigation and resolution, lab management and upgrades, hardware investigations, and repairs in support of the test program. Provides for Integrated Logistics Support and Program Management Board Support and subvendor support. Avionics hardware and software development and integration to include: P3I and ARPDD. APKWS and HIRSS address the Fast Attack Craft/Fast In-shore Attack Craft (FAC/FIAC) threat.												
FY 2013 Accomplishments: Completed Automatic Radar Periscope Detection and Discrimination (ARPDD) system design and development.												
FY 2014 Plans:												

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604216N / Multi-Mssn Helicopter Upgrade Dev		Project (Number/Name) 1707 / MH-60R Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2013	FY 2014	FY 2015
Commence Advanced Precision Kill Weapon System (APKWS) development to address Fast Attack Craft/Fast In-shore Attack Craft (FAC/FIAC) threat.						
FY 2015 Plans: Continue APKWS development and commence Helicopter Infrared Suppression System (HIRSS) development to address FAC/FIAC threat.						
Title: Engineering and Logistics				1.245	1.605	2.237
Articles:				-	-	-
FY 2013 Accomplishments: Provided engineering specialists, Integrated Logistics Support, Government Furnished Equipment, Support Equipment, Program Management, Contract Support Services, and travel to support IFF Mode 5 Interrogator development and ARPDD testing.						
FY 2014 Plans: Continue to provide engineering specialists, Integrated Logistics Support, Government Furnished Equipment, Support Equipment, Program Management, Contract Support Services, and travel to support mission avionics P3I. Commence APKWS engineering and logistics efforts.						
FY 2015 Plans: Continue to provide engineering specialists, Integrated Logistics Support, Government Furnished Equipment, Support Equipment, Program Management, Contract Support Services, and travel to support APKWS and commence HIRSS engineering and logistics efforts.						
Title: Test and Evaluation				4.007	3.460	1.503
Articles:				-	-	-
FY 2013 Accomplishments: Provided ARPDD MH-60R Mission Avionics testing and Identification, Friend or Foe Mode 5 Interrogator testing and evaluation efforts.						
FY 2014 Plans: Continue to provide MH-60R Mission testing. Commence Advanced Precision Kill Weapon System test and evaluation efforts.						
FY 2015 Plans: Continue APKWS test and evaluation efforts.						
Accomplishments/Planned Programs Subtotals				6.035	17.565	11.434

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Appropriation/Budget Activity 1319 / 5				R-1 Program Element (Number/Name) PE 0604216N / Multi-Mssn Helicopter Upgrade Dev				Project (Number/Name) 1707 / MH-60R Development				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost	
• APN-1 BLI:018200: MH-60R	742.471	779.653	1,040.568	-	1,040.568	250.031	-	-	-	-	10,533.976	
• APN-6 BLI:060510: MH-60R spares	2.648	0.540	-	-	-	0.673	-	-	-	-	300.317	
• APN-5 BLI:053000: SH60 Series	42.903	60.901	46.563	-	46.563	89.796	61.362	83.538	115.979	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
Advanced Precision Kill Weapon System (APKWS) and Helicopter Infrared Suppression System (HIRSS) will be developed using cost plus incentive fee type contracts.												
E. Performance Metrics												
Successfully achieve IOC for the Automatic Radar Periscope Detection and Discrimination (ARPDD) upgrade to the MH-60R Multi-Mode Radar. Successfully support developmental and operation test activities to qualify aircraft modifications/upgrades.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Navy												Date: March 2014			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604216N / Multi-Mssn Helicopter Upgrade Dev				Project (Number/Name) 1707 / MH-60R Development					
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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
Primary Hdw Dev, Avionics (LMSI)	SS/CPFF	Lockheed Martin : Owego, NY	873.083	0.783	Apr 2013	-		-		-		-	-	873.866	873.866
Primary Hdw/SW Dev, Advanced Precision Kill Weapon System (APKWS)	SS/CPIF	Lockheed Martin : Owego, NY	0.000	-		5.700	Jun 2014	-		-		-	-	5.700	5.700
Primary Hdw Dev. APKWS	SS/CPIF	Sikorsky : Stratford, CT	0.000	-		6.800	Jun 2014	3.540	Jun 2015	-		3.540	-	10.340	10.340
Primary Hdw Dev, APKWS	WR	NSWC Crane : Crane, IN	0.000	-		-		3.684	Jun 2015	-		3.684	-	3.684	-
Primary Hdw/SW Dev, Helicopter Infrared Suppression System (HIRSS)	SS/CPIF	Sikorsky : Stratford, CT	0.000	-		-		0.470	Jan 2015	-		0.470	7.490	7.960	7.960
VORILS	SS/CPFF	Lockheed Martin : Owego, NY	0.000	-		-		-		-		-	4.500	4.500	4.500
Prior year Product Dev Cost no longe funded in the FYDP	Various	Various : Various	280.389	-		-		-		-		-	-	280.389	-
Subtotal			1,153.472	0.783		12.500		7.694		-		7.694	11.990	1,186.439	-
Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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
Government Engineering Support	WR	NAWC AD : Patuxent River, MD	9.407	0.218	Nov 2012	0.809	Nov 2013	2.175	Nov 2014	-		2.175	Continuing	Continuing	Continuing
Government Eng Spt	WR	NAWC WD : China Lake	0.000	0.752	Nov 2012	0.100	Nov 2013	-		-		-	-	0.852	-
Government Eng Spt	Various	Various : Various	0.000	0.195	Nov 2012	0.650	Nov 2013	-		-		-	0.390	1.235	-
Prior year support cost no longer funded in the FYDP	Various	Various : Various	146.088	-		-		-		-		-	-	146.088	-
Subtotal			155.495	1.165		1.559		2.175		-		2.175	-	-	-

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Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604216N / Multi-Mssn Helicopter Upgrade Dev				Project (Number/Name) 1707 / MH-60R Development					
Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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
Remarks FY 2013 increase from PB 2014 in NAWC WD China Lake to support additional Automatic Radar Periscope Detection and Discrimination (ARPDD) testing. Increase in FY 2015 costs to support Helicopter Infrared Suppression System (HIRSS) development and Advanced Precision Kill Weapon System (APKWS) development and testing to address Fast Attack Craft/Fast In-shore Attack Craft (FAC/FIAC) threat.															
Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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
Developmental Test & Evaluation	WR	NAWC AD : Patuxent River, MD	145.685	3.073	Nov 2012	2.263	Nov 2013	1.028	Nov 2014	-		1.028	8.256	160.305	-
Operation Test & Evaluation	WR	COMOPTEVFOR : Norfolk, VA	13.200	0.934	Nov 2012	1.197	Nov 2013	0.475	Nov 2014	-		0.475	6.483	22.289	-
Prior year T&E costs no longer funded in the FYDP	Various	various : various	11.688	-		-		-		-		-	-	11.688	-
Subtotal			170.573	4.007		3.460		1.503		-		1.503	14.739	194.282	-
Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 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
Travel	WR	NAWC AD : Patuxent River, MD	4.760	0.080	Nov 2012	0.046	Nov 2013	0.062	Nov 2014	-		0.062	0.233	5.181	-
Prior year Mgmt Serv cost no longer funded in the FYDP	Various	Various : Various	34.256	-		-		-		-		-	-	34.256	-
Subtotal			39.016	0.080		0.046		0.062		-		0.062	0.233	39.437	-
			Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,518.556	6.035		17.565		11.434		-		11.434	-	-	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Navy							Date: March 2014			
Appropriation/Budget Activity 1319 / 5			R-1 Program Element (Number/Name) PE 0604216N / Multi-Mssn Helicopter Upgrade Dev			Project (Number/Name) 1707 / MH-60R Development				
	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy

Date: March 2014

Appropriation/Budget Activity

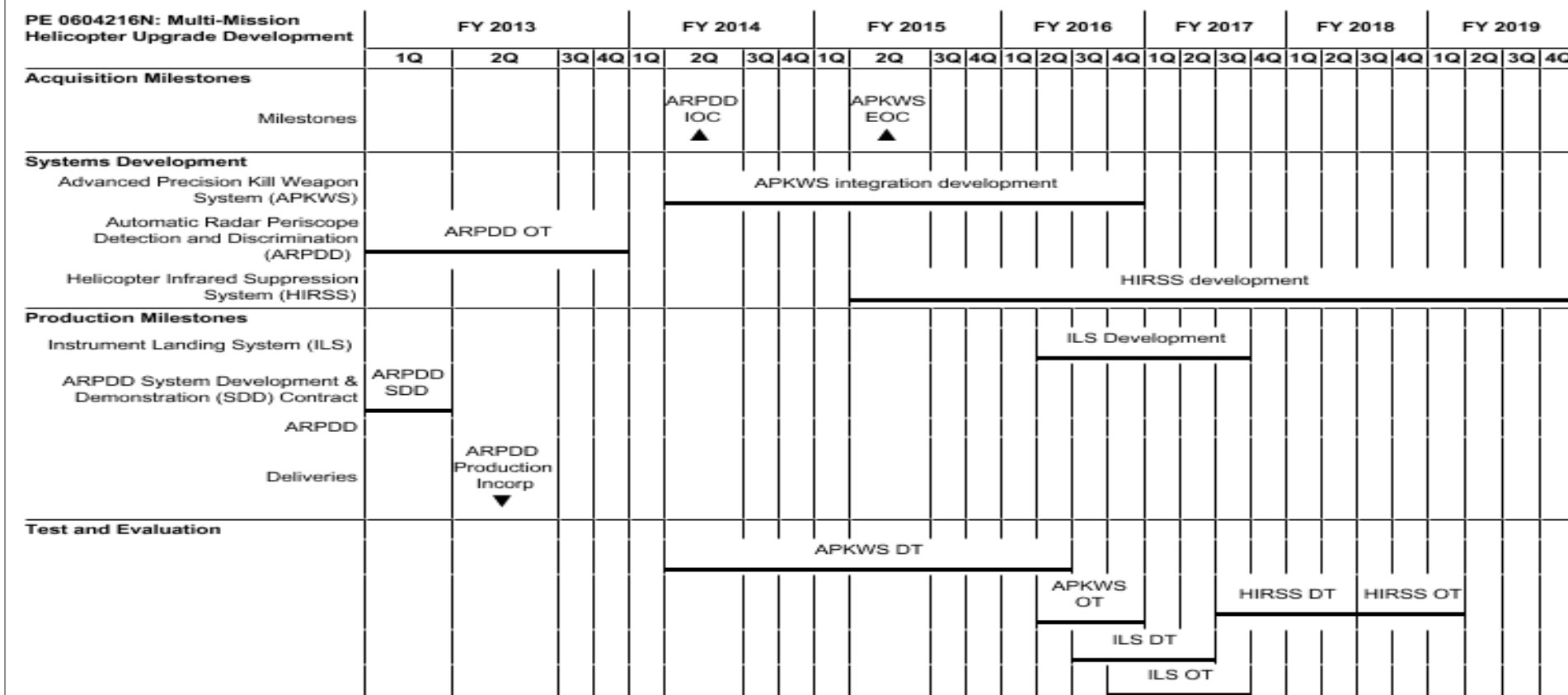
1319 / 5

R-1 Program Element (Number/Name)

PE 0604216N / Multi-Mssn Helicopter
Upgrade Dev

Project (Number/Name)

1707 / MH-60R Development



2015PB - 0604216N - 1707

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604216N / <i>Multi-Mssn Helicopter Upgrade Dev</i>	Project (Number/Name) 1707 / <i>MH-60R Development</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>PE 0604216N: Multi-Mission Helicopter Upgrade Development</i>				
Acquisition Milestones: Milestones: ARPDD IOC	2	2014	2	2014
Acquisition Milestones: Milestones: APKWS EOC	2	2015	2	2015
Systems Development: Advanced Precision Kill Weapon System (APKWS): APKWS integration development	2	2014	4	2016
Systems Development: Automatic Radar Periscope Detection and Discrimination (ARPDD): ARPDD OT	1	2013	4	2013
Systems Development: Helicopter Infrared Suppression System (HIRSS): HIRSS development	2	2015	4	2019
Production Milestones: Instrument Landing System (ILS): ILS development	2	2016	3	2017
Production Milestones: ARPDD System Development & Demonstration (SDD) Contract: ARPDD SDD contract	1	2013	1	2013
Production Milestones: Deliveries: ARPDD Production Incorporation	2	2013	2	2013
Test and Evaluation: Test & Evaluation: APKWS DT	2	2014	2	2016
Test and Evaluation: Test & Evaluation: APKWS OT	2	2016	4	2016
Test and Evaluation: Test & Evaluation: HIRSS DT	3	2017	2	2018
Test and Evaluation: Test & Evaluation: HIRSS OT	3	2018	1	2019
Test and Evaluation: Test & Evaluation: ILS DT	3	2016	2	2017
Test and Evaluation: Test & Evaluation: ILS OT	4	2016	3	2017