Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy											Date: March 2014	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*							**R-1 Program Element (Number/Name)** PE 0603208N *I Training System Aircraft*					

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	0.000	-	-	25.153	-	25.153	21.884	17.983	18.070	3.083	-	86.173
3367: *Training Aircraft Updates*	0.000	-	-	25.153	-	25.153	21.884	17.983	18.070	3.083	-	86.173

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

Note

The Federal Aviation Administration (FAA) has developed a plan to modernize the National Airspace System (NAS) in order to address the impact of air traffic growth in the United States. This multi-phase plan, called Next Generation Air Transportation System (NextGen) is intended to increase the air traffic capacity while at the same time improving safety and efficiency. In part, NextGen implements a capability called Performance Based Navigation (PBN) in which the aircraft's navigation performance capability will be a determining factor as to whether or not it can fly within specific airspace, certain air traffic routes or instrument procedures. Also, NextGen transforms the NAS from a radar based system, with aircraft interrogation, to a satellite based system utilizing Automatic Dependent Surveillance-Broadcast (ADS-B Out) communication in order to transmit the aircraft's own position to the controllers and other ADS-B In capable aircraft. PBN is an enabler for ADS-B functionality.

On May 28th, 2010 the FAA released DoT/FAA, 14 CFR Part 91: Automatic Dependent Surveillance-Broadcast (ADS-B) Out Performance Requirements To Support Air Traffic Control (ATC) Service Final Rule. This mandate stipulated that all aircraft required to have unrestricted access to operate in Classes A, B, and C airspace, certain Class E airspace, and other specified airspace requiring ADS-B Out, must be in compliance with this regulation by January 1, 2020.

A. Mission Description and Budget Item Justification

The T-45 Training System (TS) Required Avionics Sustainment Program (RASP) Increment (Inc) I (ADS-B Out):
In order for the T-45TS to continue to have unrestricted access to the NAS through its projected end of service life, 2035, and avoid impacts to CNATRA (Commander Naval Aviation Training) Strike Pilot and Naval Flight Officer (NFO) training, the T-45TS must develop, test, and integrate the RASP Inc I ADS-B Out capability. This research and development effort will be an ACAT III program and consists of the minimum required capability increase necessary for ADS-B Out, enabling 190 aircraft and 18 simulators to meet the January 1st, 2020 FAA ADS-B Out mandate. Specifically, this includes the development, integration, test and certification of an upgrade or replacement of the Global Position System/Inertial Navigation Assembly (GINA), the replacement of the APX-100 Transponder with associated data bus connectivity, antennas, and an updated Mission Display Processor Operational Flight Program (MDP/OFP), simulators and support equipment.

The T-6 Joint Primary Aircraft Training System (JPATS) Communication and Navigation System/Air Traffic Management (CNS/ATM):
JPATS is a joint United States Navy (USN)/United States Air Force (USAF) Acquisition Program designed to replace the aging primary aircraft (T-34/T-37) fleet. Principle JPATS mission is primary training for entry-level Navy/Air Force student pilots, associated instructor pilots, and primary/intermediate training for USN NFOs. JPATS includes the T-6 Texan II which is a stepped tandem seat, commercially derived aircraft powered by a single Pratt & Whitney PT6A-68 turboprop engine. It serves as the aircraft component of the JPATS integrated primary pilot training system which replaces the T-34C primary training aircraft. ADS-B Out capability will be developed, tested, and integrated into the T-6 fleet to meet the FAA January 1st, 2020 requirement to fly in NAS.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy				**Date:** March 2014	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*			**R-1 Program Element (Number/Name)** PE 0603208N *I Training System Aircraft*		
B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	25.153	-	25.153
Total Adjustments	-	-	25.153	-	25.153
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	26.494	-	26.494
• Rate/Misc Adjustments	-	-	-1.341	-	-1.341

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy											Date: March 2014	
Appropriation/Budget Activity 1319 I 5				R-1 Program Element (Number/Name) PE 0603208N I *Training System Aircraft*					Project (Number/Name) 3367 I *Training Aircraft Updates*			
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
3367: *Training Aircraft Updates*	-	-	-	25.153	-	25.153	21.884	17.983	18.070	3.083	-	86.173
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 Federal Aviation Administration (FAA) has developed a plan to modernize the National Airspace System (NAS) in order to address the impact of air traffic growth in the United States. This multi-phase plan, called Next Generation Air Transportation System (NextGen) is intended to increase the air traffic capacity while at the same time improving safety and efficiency. In part, NextGen implements a capability called Performance Based Navigation (PBN) in which the aircraft's navigation performance capability will be a determining factor as to whether or not it can fly within specific airspace, certain air traffic routes or instrument procedures. Also, NextGen transforms the NAS from a radar based system, with aircraft interrogation, to a satellite based system utilizing Automatic Dependent Surveillance-Broadcast (ADS-B Out) communication in order to transmit the aircraft's own position to the controllers and other ADS-B In capable aircraft. PBN is an enabler for ADS-B functionality.

On May 28th, 2010 the FAA released DoT/FAA, 14 CFR Part 91: Automatic Dependent Surveillance-Broadcast (ADS-B) Out Performance Requirements To Support Air Traffic Control (ATC) Service Final Rule. This mandate stipulated that all aircraft required to have unrestricted access to operate in Classes A, B, and C airspace, certain Class E airspace, and other specified airspace requiring ADS-B Out, must be in compliance with this regulation by January 1, 2020.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
Title: T45 RASP	-	-	5.478
Articles:	-	-	-

Description: Funding supports development, integration, test, and certification of the ADS-B Out capability in the T-45 Training System to comply with the January 1, 2020 FAA ADS-B Out mandate.

FY 2013 Accomplishments:
N/A

FY 2014 Plans:
N/A

FY 2015 Plans:
T-45 Training System: Begin design and integration of Required Avionics Sustainment Program (RASP) Increment (Inc) I into the T-45 by providing manpower to support an ACAT III Program of Record Pre-Milestone B entry in FY15 as well as contract efforts to support the FY15 award of the Engineering Manufacturing Development (EMD) contract for the development and integration of Performance Based Navigation (PBN) capable Global Positioning System (GPS), ADS-B Out transponder, and antennas. Begin

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 0603208N **/** *Training System Aircraft*	Project (Number/Name) 3367 **/** *Training Aircraft Updates*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
the effort to integrate this capability into the simulators, and start software coding efforts at the Systems Support Activity (SSA) at China Lake.			
Title: T6 CNS/ATM	-	-	19.675
Articles:	-	-	-
Description: Funding supports development, integration, test, and certification of the ADS-B Out capability in the T-6 Training System to comply with the January 1, 2020 FAA ADS-B Out mandate. *FY 2013 Accomplishments:* N/A *FY 2014 Plans:* N/A *FY 2015 Plans:* T-6 JPATS: Significant non-recurring engineering and qualification/certification of new equipment, corresponding ground based training systems and technical documentation for upgrade current instruments and associated components that do not support ADS-B Out as mandated for FAA compliance.			
Accomplishments/Planned Programs Subtotals	-	-	25.153

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/0569: *T45 Series (OSIP 006-16)*	-	-	-	-	-	10.600	27.258	40.068	66.272	104.249	248.447
• APN/0571: *JT Primary Acft Trnr Sys (JPATS) (OSIP 007-16)*	-	-	-	-	-	5.943	9.530	16.651	24.750	14.864	71.738

Remarks

D. Acquisition Strategy

T-45 Training System: Required Avionics Sustainment Program (RASP) Increment (Inc) I is the first increment of an ACAT III Program of Record to allow the T-45 to operate in the FAA's NextGen through 2035, the expected life of the T-45. The RDT&E effort will consist of a sole source EMD contract effort to be awarded in FY15. Replacement or modification kits for the Weapon Replaceable Assemblies (WRA) associated with the ADS-B Out capability will be either acquired through the iGATM Catalog, Global Air Traffic Management Division's online catalog managed by the 853rd Electronic Systems Group at Hanscom AFB, MA, or contracted through the Lead Systems Integrator. The System Support Activity (SSA) will be developing and testing all software for this capability increase with contracted support.

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 0603208N / *Training System Aircraft*	Project (Number/Name) 3367 / *Training Aircraft Updates*

T6 Communication, Navigation, System/Air Traffic Management (CNS/ATM) and Avionics Upgrades for FAA Compliance are outside of the JPATS Major Defense Acquisition Program and will be established as a new Joint Acquisition Program with the Air Force. For the JPATS Avionics Upgrade for FAA Compliance effort, a competitive award will be the strategy for the T-6A air vehicles due to their federated design. However, a sole source strategy will be sought for the T-6B air vehicles due to proprietary hardware and software.

E. Performance Metrics

T-45 Training System: Performance of the program will be measured via the Acquisition and SETR Process for an ACAT III program. Milestone B is planned for 3rd Qtr FY 2015 with Milestone C planned for 3rd Qtr FY 2018.

T-6 JPATS: National Airspace Compliance is planned to be a new ACAT III program with Acquisition Milestones utilizing systems engineering processes. Milestone B is planned for 1st Qtr FY16 with Milestone C planned for 1st Qtr FY17. Key Performance Parameters will be established with CNATRA and Air Education Training Command (AETC) prior to MS B approval.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy | **Date:** March 2014
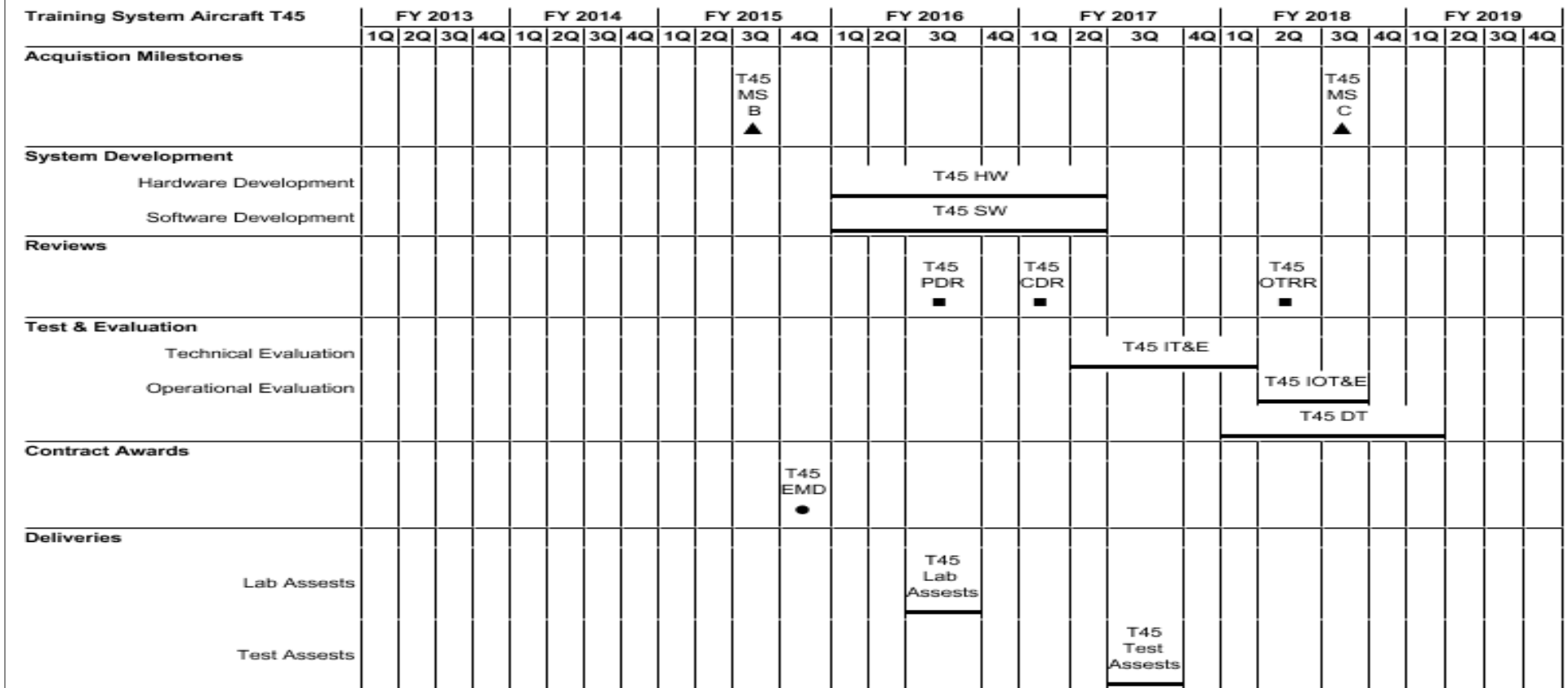
| Appropriation/Budget Activity 1319 / 5 | R-1 Program Element (Number/Name) PE 0603208N / *Training System Aircraft* | Project (Number/Name) 3367 / *Training Aircraft Updates* |

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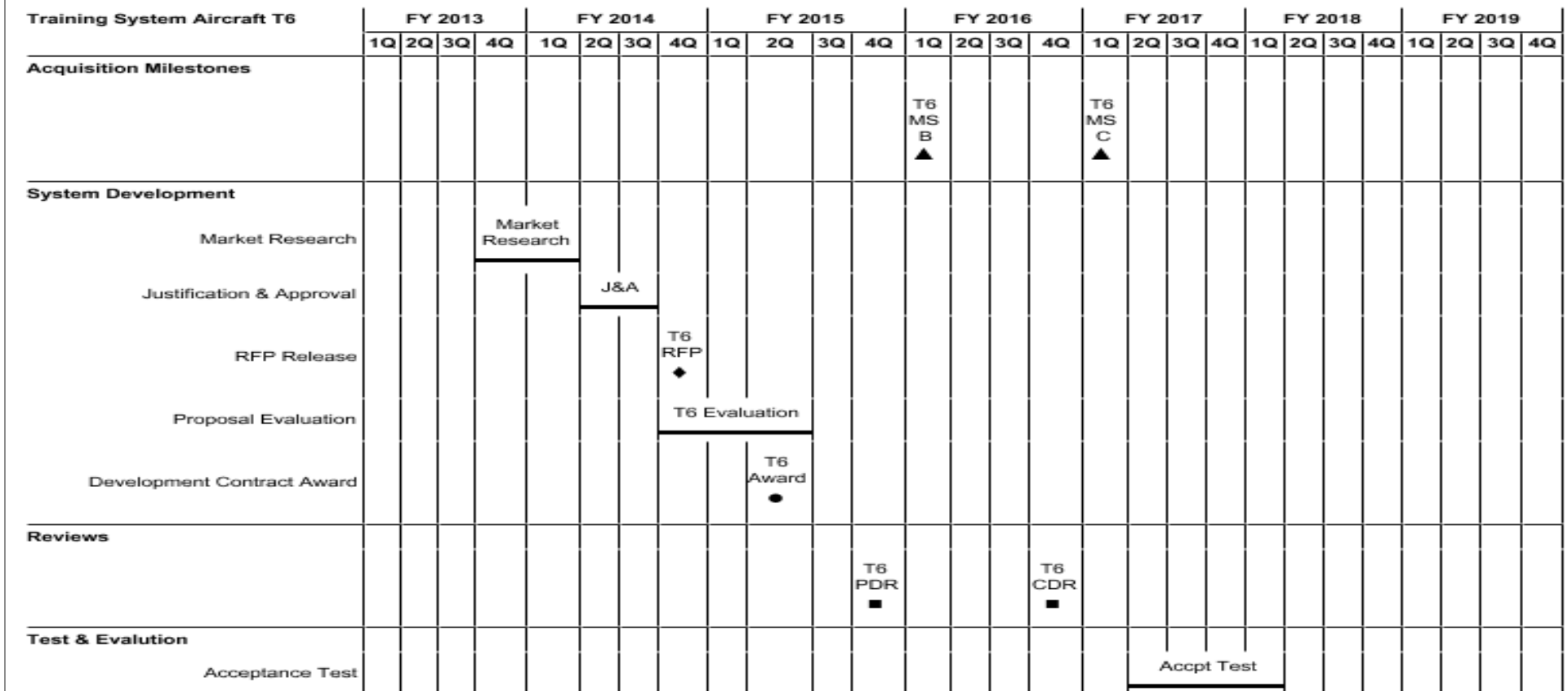| Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0603208N / Training System Aircraft	**Project (Number/Name)** 3367 / Training Aircraft Updates

Training System Aircraft T6 schedule profile chart (FY 2013–FY 2019) with Acquisition Milestones (T6 MS B, T6 MS C), System Development (Market Research, Justification & Approval/J&A, RFP Release/T6 RFP, Proposal Evaluation/T6 Evaluation, Development Contract Award/T6 Award), Reviews (T6 PDR, T6 CDR), and Test & Evaluation (Acceptance Test/Accpt Test).

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