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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 6: <i>RDT&E Management Support</i>				PE 0604258N: <i>Target Systems Development</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	68.293	44.700	59.221	-	59.221	32.999	33.509	35.907	36.596	Continuing	Continuing
0609: <i>Aerial Target System Dev</i>	57.429	33.252	36.223	-	36.223	12.759	13.033	13.225	13.468	Continuing	Continuing
0610: <i>Wpn Sys T&E Trng Dev/Proc</i>	9.451	10.067	21.608	-	21.608	18.836	19.072	21.257	21.668	Continuing	Continuing
0612: <i>Surface Targets Development</i>	1.413	1.381	1.390	-	1.390	1.404	1.404	1.425	1.460	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element funds the development and procurement of aerial targets, sea surface targets, control systems, and associated Target Augmentation and Auxiliary Systems needed to represent real world threat systems. These capabilities are key enablers to the successful execution of the developmental and operational test and evaluation of naval combat weapons systems and to the satisfaction of advanced fleet training requirements.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	66.066	44.700	41.374	-	41.374
Current President's Budget	68.293	44.700	59.221	-	59.221
Total Adjustments	2.227	-	17.847	-	17.847
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	4.000	-			
• SBIR/STTR Transfer	-1.437	-			
• Program Adjustments	-	-	17.501	-	17.501
• Rate/Misc Adjustments	-	-	0.346	-	0.346
• Congressional General Reductions	-0.336	-	-	-	-
Adjustments					

Change Summary Explanation

The Multi-Stage Supersonic Target (MSST) program increased in design/development costs, requiring additional funding in FY 2013 to align to Contractor's Estimate to Complete (EAC) and prevent delays in the initial production schedule.

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0604258N: Target Systems Development	
The Subsonic Aerial Target (SSAT) program required additional funding in FY 2013 to meet revised program cost estimates for the addition of (Classified) requirements for an Increment 2.		

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 6: RDT&E Management Support				R-1 ITEM NOMENCLATURE PE 0604258N: Target Systems Development				PROJECT 0609: Aerial Target System Dev			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0609: Aerial Target System Dev	57.429	33.252	36.223	-	36.223	12.759	13.033	13.225	13.468	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
<p>Aerial target systems, Target Control (TC), and associated Target Augmentation and Auxiliary Systems (TA/AS) are developed to support test & evaluation and advanced fleet training for Joint Strike and Littoral Warfare Systems required to defend fleet surface and air units in a hostile environment. In addition to hardware, software and operational concept development, studies will be performed by an University Affiliated Research Center (UARC) to specify and verify needed target performance for future target development. For the design and validation of targets under development, the UARC will provide engineering studies in areas such as structures, controls, guidance, and propulsion. For those hardware and software items presently under development by commercial vendors, the UARC will provide oversight and validation of vendor design and development approach.</p> <p>As to specific harware development, this project includes:</p> <ul style="list-style-type: none">- Subsonic Targets. Subsonic Aerial Target (SSAT) development. The SSAT primarily represents subsonic anti-ship cruise missile threats in direct support of the test & evaluation (T&E) of major combat weapons systems programs and of fleet training.- Supersonic Targets. Supersonic Sea Skimming Target (SSST), Multi-Stage Supersonic Target (designated the ZGQM-173A), and supersonic high-diver capability development. The family of supersonic target capabilities represents supersonic anti-ship cruise missile threats in direct support of Developmental Test and Evaluation (DT&E), Operational Test and Evaluation (OT&E) and Live Fire Test and Evaluation of major combat weapons systems programs in development.- TC and TA/AS development. TC provides command and control of targets to enable the execution of threat-representative mission profiles. TA/AS enables each target to be uniquely configured for specific mission profiles. TA/AS-configured targets are used for radar acquisition test, electronic countermeasures (jamming) evaluation, infrared measurement and testing, radar cross section evaluation, decoy-effectiveness testing, maneuver analysis, electronic warfare evaluation, warhead-effectiveness testing and evaluation of fleet tactics. TA/AS scoring capabilities include both surface and airborne scalar and vector scoring systems.											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2011	FY 2012	FY 2013	
Title: Supersonic Targets								32.516	16.387	15.400	
								0	0	0	
Description: The ZGQM-173A target emulates a two-stage anti-ship cruise missile. The ZGQM-173A will have a subsonic bus stage vehicle which will tumble and fall into the sea, and a supersonic sprint stage vehicle which continues flight to impact. The fielded system will provide threat representation in support of DT&E and OT&E and will identify deficiencies in shipboard air defense systems. Funding will also continue GQM-163 SSST upgrades/evolutionary development to keep pace with evolving threat characteristics. Efforts include continuing to establish operational capability at Pacific Missile Range Facility, developing performance envelope characteristics to include flight termination performance, and continuing development of high-diver capability.											

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 6: RDT&E Management Support	R-1 ITEM NOMENCLATURE PE 0604258N: Target Systems Development	PROJECT 0609: Aerial Target System Dev		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
FY 2011 Accomplishments: Tested the Engineering Evaluation Unit of the ZGQM-173A and held the program's Critical Design Review (CDR). Began Test and Evaluation (T&E) training, conducted the program's Integrated Readiness Review, held quarterly Program Management Reviews (PMRs), and held quarterly Schedule Risk Assessments (SRAs).				
FY 2012 Plans: Conduct Flight Readiness Review of the ZGQM-173A and conduct Engineering Development Model Test Flights One through Three. Conduct Integrated Logistics Assessment and conduct rocket motor qualifications. Conduct quarterly PMRs, hold quarterly SRAs, and conduct the program's Test Readiness Review (TRR). Develop Low Rate Initial Production (LRIP) Request For Proposals package.				
FY 2013 Plans: Plan Software Verification Review and Production Readiness Review for LRIP of the ZGQM-173A. Also, conduct Technology Readiness Assessment, final flight tests of Engineering and Manufacturing Development (EMD) missiles 4, 5, and 6, and the End-To-End Flight Test. Prepare for Milestone C, make award of LRIP contract, and complete EMD vendor effort by 28 Feb 2013. Conduct quarterly PMRs and hold quarterly SRAs.				
Title: Subsonic Targets Articles: Description: The SSAT represents subsonic anti-ship cruise missile threat in direct support of the T&E of major combat weapons systems programs and fleet training. It is the follow-on to the BQM-74 and BQM-34 targets, featuring longer range, lower cruise altitudes and greater maneuverability. FY 2011 Accomplishments: Completed Source Selection and successfully passed Milestone B Review; Development contract awarded January 2011. Conducted the System Requirement Review, SRAs, and the Integrated Baseline Review. Incorporated configuration control into EMD and the System Engineering Plan. Managed the execution of the EMD phase and conducted and supported required reviews and development decisions. FY 2012 Plans: Conduct EMD. Complete TRR and conduct the Preliminary Design Review . Commence effort on Developmental Test I. FY 2013 Plans: Conduct EMD. Conduct CDR.		19.284 0	11.316 0	15.217 0
Title: Target Control and Target Augmentation and Auxiliary Systems Articles:		5.629 0	5.549 0	5.606 0

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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 6: <i>RDT&E Management Support</i>				R-1 ITEM NOMENCLATURE PE 0604258N: <i>Target Systems Development</i>			PROJECT 0609: <i>Aerial Target System Dev</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2011	FY 2012	FY 2013		
<p>Description: Continue to support TC and TA/AS capable of supporting T&E and fleet training activities. TC involves the improved command and control systems capable of controlling multiple targets simultaneously while delivering adequate fidelity of T&E telemetry data. Augmentation and Auxiliary systems must be capable of augmenting targets in support of radar acquisition test, electronic countermeasures (jamming) evaluation, infrared measurement/test, radar cross section evaluation, decoy effectiveness, maneuver analysis, electronic warfare, warhead effectiveness and evaluation of fleet tactics, readiness and training.</p> <p>FY 2011 Accomplishments: Filthy Badger Digital Radio Frequency Modulator (DRFM)- continued incremental upgrade efforts. Millimeter Wave (MMW) Threat Emitter/Signal Simulator - development of two prototypes. MMW Offboard - Completion of two prototypes. MMW Antennas - development of two prototypes for each of the six different types required. Ongoing intelligence gathering and exploitation has been accomplished.</p> <p>FY 2012 Plans: Filthy Badger DRFM - continue incremental upgrade efforts. Continue MMW Threat Emitter development. Ongoing intelligence gathering and exploitation will be accomplished.</p> <p>FY 2013 Plans: Filthy Buzzard DRFM - continue incremental upgrade efforts. E-F Band Radio Frequency Deck - development of two prototypes planned. Dual Band System - development of two prototypes planned. QF-16 Active Electronically Scanned Array, with Tracking - development of 1 prototype Ongoing intelligence gathering and exploitation will be accomplished.</p>											
Accomplishments/Planned Programs Subtotals							57.429	33.252	36.223		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• WPN 22800: <i>Aerial Targets</i>	41.769	46.359	61.518	0.000	61.518	70.979	72.390	73.620	74.932	Continuing	Continuing
• WPN 612020: <i>Initial Spares</i>	1.060	1.072	1.756	0.000	1.756	1.682	1.708	1.950	1.781	Continuing	Continuing
D. Acquisition Strategy											
Not applicable.											

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E. Performance Metrics				
EFFORT	PERFORMANCE REQUIREMENT	OBJECTIVE	THRESHOLD	TEST RESULT
SSAT EMD program	Maximum Speed at Low Altitude [Mach (M) at feet (ft) above wave crest at WMO Sea State conditions]	0.95 M @ 6.6 ft @ Sea State 5	0.90 M @10.0 ft @ Sea State 3	TBD
ZGQM-173A EMD	Speed of separated sprint vehicle	Mach 2.2 to Mach 3.5	Threshold=Objective	TBD
TC-TA/AS Target Threat Simulation Program	Microwave power module - Second Source	100 Watts output power	Threshold=Objective	TBD

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 6: RDT&E Management Support				R-1 ITEM NOMENCLATURE PE 0604258N: Target Systems Development				PROJECT 0610: Wpn Sys T&E Trng Dev/Proc			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0610: Wpn Sys T&E Trng Dev/Proc	9.451	10.067	21.608	-	21.608	18.836	19.072	21.257	21.668	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
This project provides for the development and procurement of aerial targets and associated systems used exclusively for test and evaluation of naval weapons systems which closely represent current and projected threats to fleet units in the Joint Strike and the Littoral Warfare environments. These representations must include characteristics related to size, performance envelope, and electromagnetic and infrared signatures. As threats change, changes must be made to keep the targets threat representative in response to changes in the test requirements of the developers of naval weapons systems.											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2011	FY 2012	FY 2013	
Title: Air Superiority Target (AST) Articles: Description: The AST is being developed as the follow-on to the current Full Scale Aerial Target (FSAT) and is an Air Force-managed program. The AST is a converted F-16 aircraft and provides a supersonic, high altitude, remote-controlled aerial target. This target will have full command and control capability through normal flight maneuvers. The AST target presentations support aircraft and weapons systems testing and development, including that of the Joint Strike Fighter (JSF), AIM-9X Sidewinder missile, Advanced Medium Range Air-to-Air Missile (AMRAAM), and Standard Missile 6. FY 2011 Accomplishments: Continued conduct of Engineering, Manufacturing and Development (EMD). FY 2012 Plans: Continue conduct of EMD. FY 2013 Plans: Commence procurement of AST assets with RDT&E,N funding.								4.400	7.442	18.395	
								0	0	0	
Title: QF-4 FSAT Articles: Description: The FSAT is a supersonic, high altitude, remote-controlled aerial target. This target has full command and control capability through normal flight maneuvers. The program will include engineering and logistics support for the FSAT, including Aviation Depot Level Repairables and procurement of kit material. The QF-4 target presentations support aircraft and weapons systems testing and development, including that of the JSF, AIM-9X Sidewinder missile, AMRAAM and Standard Missile 6.								4.840	2.625	3.213	
								0	0	0	

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012
FY 2011 Accomplishments: Maintained and operated the fielded inventory earmarked for the Navy.			
FY 2012 Plans: Plan to maintain and operate the fielded inventory earmarked for the Navy.			
FY 2013 Plans: Plan to maintain and operate the fielded inventory earmarked for the Navy.			
Title: Target Augmentation and Auxiliary System (TA/AS) and Scoring Systems Description: Continue to support TC and TA/AS capable of supporting T&E activities. TC development includes improved command and control systems capable of controlling multiple targets simultaneously while delivering adequate fidelity of T&E telemetry data. TA/AS must be capable of augmenting targets in support of radar acquisition testing, infrared measurement and test, decoy effectiveness testing, maneuver analysis, warhead effectiveness testing, and evaluation of fleet tactics. Scoring systems include both surface and airborne scalar and vector scoring. FY 2011 Accomplishments: Continued pursuing alternative test set purchase sources.		Articles: 0.211 0	- -
Accomplishments/Planned Programs Subtotals		9.451	21.608
C. Other Program Funding Summary (\$ in Millions)			
N/A			
D. Acquisition Strategy			
N/A			
E. Performance Metrics			
EFFORT	PERFORMANCE REQUIREMENT	OBJECTIVE	THRESHOLD
QF-4	Flight Termination Sys.- Reliable	Achieve requirement	Threshold=objective
Full	& effective auto & manual failsafe		Satisfactory
Scale	fast destruct, orbit destruct, &		
Target	destruct receiver capability		

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PE 0604258N: *Target Systems Development*
Navy

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 6: RDT&E Management Support				R-1 ITEM NOMENCLATURE PE 0604258N: Target Systems Development				PROJECT 0612: Surface Targets Development			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0612: Surface Targets Development	1.413	1.381	1.390	-	1.390	1.404	1.404	1.425	1.460	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project develops seaborne targets and their related target augmentation systems in support of air-to-surface and surface-to-surface weapons test and evaluation and fleet training.

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

	FY 2011	FY 2012	FY 2013
Title: Surface Targets Development	1.413	1.381	1.390
Articles:	0	0	0
FY 2011 Accomplishments: Monitored developments in Command and Control (C2) Completed portable C2 Unit Portable Command and Control Unit (PCCU) software baseline update and testing Reviewed capabilities of inventory with regard to threat, weapons test schedule and fleet training requirements Rebaselined Radar Cross-Section (RCS) for various powered and towed targets with augmentation Developed packages to tailor RCS Completed realistic human target, including infrared signature and vulnerability testing Completed small baseline HARPOON target development and testing Completed real-time target sea state measurement and operator feedback Completed SeaCAN printed circuit boards obsolete replacement Completed polyethylene tow target testing Completed deployable tow target testing and offset tow target testing			
FY 2012 Plans: Monitor developments in C2 PCCU software baseline update and testing Review capabilities of inventory with regard to threat, weapons test schedules and fleet training requirements Re-baseline RCS for various powered and towed targets with augmentation Develop packages to tailor RCS Develop signature management techniques to address evolving threats Complete polyethylene tow target development Complete deployable tow target development			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)											
Integrate PCCU into System for Naval Target Control Integrate realistic human target (Humannequin) onto powered seaborne targets Complete real-time target sea state measurement and operator feedback FY 2013 Plans: Monitor developments in Command and Control Portable Command and Control Unit (PCCU) software baseline update and testing Review capabilities of inventory with regard to threat, weapons test schedules and fleet training requirements Re-baseline Radar Cross-Section (RCS) for various powered and towed targets with augmentation Develop packages to tailor RCS Develop signature management techniques to address evolving threats Integrate PCCU into System for Naval Target Control							FY 2011	FY 2012	FY 2013		
Accomplishments/Planned Programs Subtotals							1.413	1.381	1.390		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• OPN/5455: <i>ASW Range SE</i>	7.082	7.842	47.930	0.000	47.930	27.342	16.902	17.024	17.189	0.000	148.545
D. Acquisition Strategy Not applicable.											
E. Performance Metrics Review capability of inventory with respect to threat, weapons test schedules and fleet training requirements. OBJECTIVE: Available inventory of seaborne targets to meet fleet requirements.											