Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*							
COST ($ in Millions)	**FY 2009 Actual**	**FY 2010 Estimate**	**FY 2011 Base Estimate**	**FY 2011 OCO Estimate**	**FY 2011 Total Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
Total Program Element	39.835	102.330	146.096	0.000	146.096	140.915	65.878	35.162	0.368	Continuing	Continuing
675039: *B-52 Modernization*	39.835	102.330	146.096	0.000	146.096	140.915	65.878	35.162	0.368	Continuing	Continuing

A. Mission Description and Budget Item Justification

B-52 Modernization is a comprehensive program to ensure B-52 viability to perform current and future wartime missions to include datalinks, navigation, sensors, weapons, and Electronic Warfare (EW) and training capabilities. B-52 modernization (initiated in FY 2005) integrates and adds both tactical and global data link communications for real time command and control, targeting, and intelligence. It also upgrades antiquated air traffic management (ATM) systems with those supported by three key functions using satellite technology: Communications, Navigation and Surveillance (CNS). Modernization also upgrades training devices to support aircrew and maintenance training with the latest B-52 capability. In addition, modernization improves conventional warfare capability with additional MIL-STD-1760 smart weapons and improved weapons carriage and fully integrates advanced targeting pods with the offensive avionics system. B-52 modernization also upgrades or replaces legacy defensive EW systems to include the radar warning receiver, jammers, chaff and flare dispensers and situational awareness displays as well as integration of offensive EW such as the Miniature Air-Launched Decoy (MALD) and MALD-Jammer (MALD-J).

CONECT

The B-52 Combat Network Communication Technology (CONECT) acquisition program will support nuclear and conventional operations by upgrading the B-52 fleet with tactical data link and voice communications capabilities along with improved threat and situational awareness to support participation in network centric operations. The CONECT upgrade includes new Multi-Functional Color Displays (MFCDs) and a digital interphone system, which will survive and function through the nuclear environment to enhance crew interaction and situational awareness. To enable net centric operations, the CONECT upgrade integrates: on-board client/server architecture supporting distributed processing with independent control functions; UHF Beyond Line-Of-Sight (BLOS) Joint Range Extension (JRE) capability via ARC-210 Warrior radio to exchange J-Series messaging within theater; Intelligence Broadcast Receiver (IBR); limited Internet Protocol (IP)-based UHF BLOS link supporting e-mail and file transfers; and Improved Data Modem (IDM)-based digital Variable Message Format (VMF) datalink to significantly enhance close air support (CAS) missions. This integrated suite will provide the B-52 fleet with a machine-to-machine data transfer capability supporting aircraft re-tasking and re-targeting of Conventional Air Launched Cruise Missile (CALCM) and J-series weapons across the range of B-52 military operations and missions.

B-52 EHF

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The B-52 Extremely High Frequency (EHF) will integrate and install the B-52 fleet with assured and survivable two-way EHF SATCOM link for Emergency Action Messages (EAMs) and report-backs to meet Joint Chiefs of Staff (JCS) nuclear protected Information Exchange Requirements (IER). The B-52 EHF will integrate the Family of Advanced Beyond-Line-of-Sight (BLOS) Terminal (FAB-T) Increment 1 system developed and procured by Space and Missile Command (SMC) through PE 0303601F. The FAB-T system consists of the Operator Interface Group, Modem Processor Group, and Antenna Group. The B-52 EHF will integrate the following capability into the CONECT baseline B-52 architecture: a high data rate BLOS communication link supporting IP-based Global Information Grid (GIG) interoperability. The two Multi-function Color Displays (MFCDs) and the additional J-Series Messages that were to be integrated into CONECT with the B-52 EHF have been moved to the Strategic Radar Replacement and CONECT programs, respectfully. In addition, the automated reporting of aircraft fuel level status off-board the jet capability will also be moved from the B-52 EHF. Disposition of this capability is pending an approved acquisition strategy. The B-52 EHF program is planned to be accomplished in three increments. Increment 1 is the up front program planning and risk reduction trade studies on items like radome mounting, environmental cooling system (ECS) capabilities, antenna boresighting, etc. Increment 2 will integrate, and install the FAB-T equipment for strategic connectivity, as well as implement trade study solutions. In addition, the ECS will need to be upgraded or replaced. The ECS modification requirements will allow enough margin to accommodate near-term, future roadmap efforts. Finally, Increment 3 will provide GIG and net ready capability as well as full integration with other B-52 systems.

Trainers and upgrades for CONECT & EHF

In order to maintain currency with the latest aircraft configuration, the CONECT and EHF programs will update existing trainers or use computer-based training to add CONECT and EHF functionality to meet user-training requirements and establish a system integration laboratory (SIL) for updates of the Weapon System Trainers (WST).

Advanced Targeting Pod Functionality

The B-52 Modernization program fully integrates Advanced Targeting Pods (ATP) by linking pod control, display and target geo-location with the B-52 Offensive Avionics System (OAS). The B-52 ATP effort continues the ATP (Sniper or LITENING) integration effort that began in FY07 with GWOT funding. The ATP effort develops aircraft software updates to add and incorporate advanced pod functionality into the B-52. In addition, this effort upgrades the software functions of the new Alternate Mission Equipment (AME) (Multi Function Display and the Integrated Hand Controller), developed and procured under the B-52 Advanced Weapons Integration (AWI) modification, and enables the B-52 to utilize a LITENING or Sniper pod. This effort provides hardware and software upgrades to the existing aircrew/ maintenance trainers and the SIL.

Weapons Improvements

B-52 Modernization also includes improvement of conventional warfare capability. This effort provides development and testing to rapidly integrate weapons with a large array of properties but not limited to: stealth, hard target penetration, standoff, adverse weather, precision strike, loiter, decoy, defense suppression, post-release/

launch re-target capability, area denial, mobile targets, and multiple simultaneous attack. These capabilities are provided through the integration of advanced weapons both internally (MIL-STD-1760 data bus in the weapons bay) and externally.

1760 In the Bay

B-52 Modernization provides for expansion of B-52H conventional munitions carriage capability through modification of weapons carriage equipment and aircraft software IAW MIL-STD-1760 (hereafter, "1760"). The 1760 In the Bay program modifies aircraft software and the Common Strategic Rotary Launcher (CSRL) to carry 1760-based munitions in the B-52's internal weapons bay. It follows a 2005 flight demonstration in which a B-52 successfully dropped eight Joint Direct Attach Munitions (JDAMs) from a modified CSRL using a prototype Integrated Weapons Interface Unit (IWIU). Following the demonstration, the IWIU went into production to sustain external wing pylon 1760 requirements under the AWI program. Congressional adds in FY 2006 and 2007 provided the software design work and risk reduction activities for an internal 1760 capability. The 1760 In the Bay program uses the same external pylon IWIU to control the smart weapons on the CSRL. Modified CSRLs lose their current nuclear capability; therefore, only those launchers not required for nuclear missions will be modified. However, nuclear capability can be restored to the CSRL upon integration of 1760 Type II nuclear munitions. The program also modifies the aircraft's weapon interface Stores Management Overlay (SMO) software. The SMO for each weapon family will be upgraded to expand its capability from external pylon-only carriage to include carriage on the CSRL in the weapons bay. 1760 In the Bay includes hardware and software upgrades to aircrew/maintenance training devices, weapons carriage and release systems test equipment, and the B-52 SIL and Avionics Integration Support Facility (AISF). Initial program threshold capability modifies the Joint Direct Attack Munition (JDAM) SMO for internal carriage of eight GBU-31 (2000lb) JDAMs on each modified 1760 CSRL. Future internal capabilities include all family variants of (1) JDAM, such as, GBU-38 (500 lb), GBU-54 (Laser JDAM), and Countermine System; (2) Joint Air to Surface Standoff Missile (JASSM) and JASSM-Extended Range (JASSM-ER); (3) Wind Corrected Munitions Dispenser (WCMD); (4) MALD and MALD-J; (5) Laser Guided Bombs (LGB); and (6) expansion of CSRL carriage quantity.

Communication Navigation Surveillance/Air Traffic Management (CNS/ATM)

Capabilities identified under CNS/ATM activities will include FM Immunity, digital communications (voice and data), improved navigation accuracy such as Required Navigation Performance (RNP) or Global Positioning System (GPS) enhancements, Reduced Vertical Separation Minimum (RVSM), Traffic Alert and Collision Avoidance System (TCAS), enhanced situational awareness such as Mode S/Mode 5 Identify Friend or Foe (IFF), Communications Management Unit, HF Data Link, 8.33MHz VHF, Auto Dependent Surveillance (both address and broadcast), and any follow-on activities to associated components/systems resulting from modifications to CNS/ATM systems.

Mode S/5 Identification Friend or Foe (IFF)

Mode S/5 IFF is part of the CNS/ATM effort and will develop and integrate modern technology into the B-52 to enable it to operate in the evolving air traffic environment. This effort is driven by the International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) mandates to comply with

performance standards to allow the B-52 to operate safely in controlled airspaces. This program will also yield significant savings through more efficient flight routes and altitudes. The Mode S/5 portion includes upgrade of the current APX-64 with the APX-119 transponder capable of Mode S/5 and will leverage architecture to include simultaneous integration of Automatic Dependent Surveillance - Broadcast (ADS-B) capability required for operations in European airspace by 2015 and CONUS airspace by 2020.

Replace B-52 Anti-Skid

The B-52 Anti-Skid system is used to maintain control of aircraft during landings and taxi operations. It prevents aircraft skidding by sensing the exact amount of brake pressure needed for safe braking under all runway conditions and without tire damage. Aircraft not equipped with anti-skid capabilities require special procedures not conducive to normal operations and face increased risk of damage during taxi, landings and emergency stops. Ogden Air Logistics Center (OO-ALC) has identified the Anti-Skid skid detector as a Diminishing Manufacturing Sources (DMS) item requiring replacement beginning in FY11. However, depot maintenance is attempting to refurbish some failed detectors in order to provide spares until 2014/2015 when the replacement will be available. The Anti-Skid is a joint effort between OO-ALC and Oklahoma City Air Logistics Center (OC-ALC). This program covers the Group A and Group B hardware development, ground and flight test, and installation of the system to include upgrade of the maintenance trainers.

Strategic Radar Replacement

The B-52 Strategic Radar Replacement (SR2) program replaces the current AN/APQ-166 Strategic Radar fielded in the 1960s and then upgraded in the 1970s and 1980s. Although modified several times, it has never been totally replaced and several parts of the system remain from the original design such as the antenna reflector, feed, and casting. The legacy ALQ-166 radar is becoming unsupportable with increasing signs of performance degradation, multiple DMS and materiel shortage issues and may require grounding aircraft beginning in 2016.

The Strategic Radar Replacement (SR2) program is a radar replacement program that will take advantage of the advanced capabilities of modern non-developmental radars, maximizing commonality with other platforms. The B-52 SR2 Program will integrate, test, and field a modern radar system to support the requirements of keeping the B-52 combat capable for its extended service life. Additionally, the remaining two legacy Multi-Function Display Systems will be replaced.

Engineering Studies & Analysis and Test & Evaluation

B-52 Modernization funds test activities at the Air Force Flight Test Center (AFFTC), engineering and planning studies for potential future weapon system enhancements (weapons, sensors, avionics and EW), upgrades to the B-52 SIL, AISF and WSTs, and weapon system operational/safety, supportability, reliability, and Total Ownership Cost (TOC) improvements.

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B-52 Tactical Data Link (TDL)

The B-52 Tactical Data Link (hereafter, TDL) will integrate Line-of-Sight (LoS) TDL, LINK-16 or new technologies alternative waveforms for inclusion in the CONECT architecture. Current CONECT Capabilities Description Document identifies mission area capability gaps that support rationale for TDL communications. Full integration of TDL on the B-52 involves significant effort to design, test, and certify the system for operational use. This program will develop DoD architecture products with an Information Support Plan (ISP) to provide mission area justification for TDL integration. Perform an Analysis-of-Alternatives (AoA) to determine terminal selection and transport/waveform requirements to meet operational needs. Develop candidate requirements/architecture definition utilizing the B-52 CONECT architecture as the baseline for integration. Perform aircraft installation trade studies to identify potential issues with integration (such as, size, weight, power, cooling, and antenna location/performance). Demonstrate capabilities using chosen AoA option.

Reconstitution of B-52 Nuclear Capability Study

Renewed emphasis of the Air Force Nuclear Mission and the pivotal role the B-52 capabilities play into that role require a study to be completed to ensure the platform maintains an enhanced level of readiness. The study will evaluate the nuclear hardening of the Integrated Weapons Interface Unit (IWIU). The study will look at the conceptual development of a MIL-STD-1760 Nuclear Weapons interface. The hardening of the IWIU will ensure the survivability of existing Global Strike Weapons as well as provide for future Nuclear 1760 capable weapons both in the bay and on the wing launch platforms.

ADDITIONAL EFFORTS

B-52 Modernization funds additional efforts that stem from the operation and maintenance of a 48 year-old aircraft, such as parts obsolescence and DMS. Examples include, but are not limited to upgrades to outdated avionics computers, mission planning interfaces to the Air Force Mission Support System (AFMSS) and other missing planning systems (JMPS), upgrades to the EW suite, and studies and analysis.

All B-52 development programs support planned requirements for unique identification in their production phases. The B-52 Modernization upgrade program is included in Budget Activity (BA) 7, Operational System Development.

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force	DATE: February 2010
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B. Program Change Summary ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	41.124	93.930	0.000	0.000	0.000
Current President's Budget	39.835	102.330	146.096	0.000	146.096
Total Adjustments	-1.289	8.400	146.096	0.000	146.096
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		8.400			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-1.289	0.000	146.096	0.000	146.096

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2009	FY 2010
Project: 675039: *B-52 Modernization*		
Congressional Add: *B-52 TACTICAL DATA LINK (TDL) will integrate Line of Sight (LoS) TDL, LINK-16 or new technologies alternative waveforms for inclusion in the CONECT architecture.*	0.000	6.000
Congressional Add: *In FY 2009: N/A*	0.000	2.400
Congressional Add Subtotals for Project: 675039	0.000	8.400
Congressional Add Totals for all Projects	0.000	8.400

Change Summary Explanation

FY10 - Increase of $8.4M includes two Congressional adds for Tactical Data Link ($6.0M) and a Nuclear Reconstitution Study ($2.4M).

The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*	

COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
675039: *B-52 Modernization*	39.835	102.330	146.096	0.000	146.096	140.915	65.878	35.162	0.368	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Combat Network Communication Technology (CONECT) Program is an evolutionary acquisition program to develop, integrate, test, and field several capabilities into the B-52 weapon system. CONECT upgrades the B-52 fleet with digital and voice communications capabilities and improved situational awareness to support participation in network centric operations and interoperability with the Global Information Grid (GIG). CONECT capabilities are implemented in a phased approach. Phase A upgrades digital and voice communication capabilities, on-board client/server networked architecture supporting distributed processing and control functions, integration of the Intel Broadcast System/Receiver (IBS/R) and new Multi-Functional Color Displays (MFCDs). This phase also provides the B-52 fleet with a machine-to-machine capability supporting aircraft retasking and retargeting of CALCM and J-series weapons, a limited Internet Protocol (IP)-based UHF Beyond Line-Of-Sight (BLOS) capability, and improved situational awareness. Phase B integrates the Family of Advanced BLOS Terminals (FAB-T) system hardware to support Extremely High Frequency (EHF) Satellite Communications (SATCOM). CONECT Phase B provides the B-52 fleet with a survivable SATCOM link for emergency action messages (EAMs) to meet STRATCOM requirements as well as a high bandwidth BLOS data link communication capability supporting IP based GIG interoperability. In addition, two remaining legacy crew station displays are replaced with new MFCDs.

Trainers & CONECT
B-52 aircrew and maintenance training devices are a mix of 1970's and '80's technology. Most have reached their design capacity and must be upgraded to remain useful training tools. Upgrades to some of the training systems must occur prior to incorporating CONECT functionality. This planned approach enables the trainers to maintain currency with the latest aircraft configuration. The CONECT program upgrades existing trainers, establishes a system integration laboratory for development of aircrew trainers, and adds CONECT Phase A and Phase B functionality to meet user-training requirements.

Weapons Improvements
B-52 Modernization also includes improvement of conventional warfare capability. This effort provides development and testing to rapidly integrate weapons with a large array of properties, but not limited to: stealth, hard target penetration, standoff, adverse weather, precision strike, loiter, decoy, defense suppression, post-release/launch re-target capability, area denial, mobile targets, and multiple simultaneous attack. These capabilities are provided through the integration of advanced weapons both internally (MIL-STD-1760 in the bomb bay) and externally.

Advanced Targeting Pod Functionality

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The B-52 Modernization program fully integrates the Advanced Targeting Pod (ATP) by linking pod control, display and target geo-location with the B-52 offensive avionics system. The B-52 ATP effort continues the ATP (Sniper or LITENING AT) integration effort which began in FY 07 with GWOT funding. The ATP effort develops aircraft software updates to add and incorporate advanced pod functionality into the B-52. In addition, this effort upgrades the software functions of the Alternate Mission Equipment (AME) (Multi Function Display and the Integrated Hand Controller), and enables all wired aircraft to utilize a LITENING pod, LITENING AT or Sniper. This effort provides hardware and software upgrades to the existing aircrew/maintenance trainers and the system integration lab.

GATM
GATM, or more accurately, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM), will develop and integrate modern technology into the B-52 to enable it to operate in the evolving air traffic environment. This effort is driven by the International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) mandates to comply with performance standards to allow the B-52 to operate safely in controlled airspaces. This program will also yield significant savings through more efficient flight routes and altitudes. Functions requiring updated technology in the B-52 are communications, navigation, and surveillance. More specifically the capabilities upgraded under CNS/ATM activities will include FM Immunity, Digital Communications (voice to data), improved navigation accuracy such as Required Navigation Performance (RNP) or Global Positioning System (GPS) enhancements, Reduced Vertical Separation Minimum (RVSM), Traffic Alert and Collision Avoidance System (TCAS), enhanced situational awareness such as Mode S/Mode 5 Identify Friend or Foe (IFF), Communications Management Unit, HF Data Link, 8.33MHz VHF, Auto Dependent Surveillance (both address and broadcast), and any follow-on activities to associated components/ systems resulting from modifications to CNS/ATM systems.

Test & Evaluation
Additionally, B-52 Modernization funds test activities at the Air Force Flight Test Center (AFFTC), engineering and planning studies for potential future weapon system enhancements (weapons, sensors, and avionics), and weapon system operational/safety, supportability, reliability, and Total Ownership Cost (TOC) improvements.

Additional Efforts
Examples include upgrades to avionics computers, mission planning interface to the Air Force Mission Support System (AFMSS) and upgrades to the Electronic Countermeasures (ECM) suite.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: ADVANCED TARGETING POD (ATP)	1.766	8.608	2.180	0.000	2.180

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: In FY 2009: Develop LITENING Pod operational software; provide repair and/or parts replacement for test pod assets; manage support for ATP pod software development, test and logistics; upgrade software functions of AME *FY 2010 Plans:* In FY 2010: Test LITENING Pod operational software in lab environment prior to developmental test. Execute developmental test to demonstrate and verify required performance for ATP software functionality, includes 8-10 unique test events. Provide repair and/or parts replacement for test pod assets; manage support for ATP pod software development, test and logistics; upgrade software functions of AME *FY 2011 Base Plans:* In FY 2011: Develop, test, verify, and field ATP functions in B-52 WST equipment. *FY 2011 OCO Plans:* In FY 2011 OCO: Not Applicable.					
MAJOR THRUST: COMBAT NETWORK COMMUNICATIONS TECHNOLOGY (CONECT) EMD *FY 2009 Accomplishments:* In FY 2009: Completed test aircraft modification and ferried test aircraft to Edwards AFB beginning ground and flight tests *FY 2010 Plans:* In FY 2010: Continuation of CONECT ground and flight testing. Begin Technical Order Validation and Verification (TOV&V). Begin Depot Stand-up planning. Continue integration and lab testing of final software drop and incorporate additional J-series messages into final software load.	35.111	43.453	23.543	0.000	23.543

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: In FY 2011: Complete development of Drop C ground and flight test issues and continue integration and lab testing of final software configuration. Analyze/fix ground/flight test issues as they are identified. Conduct Initial Operational Test & Evaluation. Begin integrating CONECT functionality into training devices. *FY 2011 OCO Plans:* In FY 2011 OCO: Not Applicable.					
MAJOR THRUST: B-52 EXTREMELY HIGH FREQUENCY (EHF) *FY 2009 Accomplishments:* In FY 2009: Issued contract for EHF planning and risk reduction Increment 1 work efforts. Began planning tasks that included the systems engineering required to accomplish program risk reduction. The FY 2009 effort in support of Increment 1 will be the basis for Increment 2. *FY 2010 Plans:* In FY 2010: Completion of EHF planning and risk reduction efforts to reach System Requirement Review including the ECS requirements. The FY 2010 Increment 2 work efforts initiate the tasks necessary to bring the EHF program through Preliminary Design Review, upgrade the SIL and purchase of additional GFP. *FY 2011 Base Plans:* In FY 2011: Continuation and completion of the EHF Increment 2 Preliminary Design Review work efforts and to the next approved milestone event. *FY 2011 OCO Plans:* In FY 2011 OCO: Not Applicable.	2.000	20.649	45.349	0.000	45.349
MAJOR THRUST: B-52 ANTI-SKID REPLACEMENT	0.000	0.795	5.996	0.000	5.996

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: In FY 2009: N/A *FY 2010 Plans:* In FY 2010: Define requirements for the Group A and control panel; begin development of the Group A hardware and control panel. Begin phased Systems Safety Analysis of anti-skid system level Failure Modes Effects and Criticality Analysis (FMECA); address aircraft integration issues; develop source control drawings, installation and deletion drawings; develop/revise wiring diagrams, harness designs, installations and deletions drawings. *FY 2011 Base Plans:* In FY 2011: Continue phased Systems Safety Analysis; conduct Hardware in the Loop (HITL) simulation and test reports; develop preliminary Tech Order (TO) source data and installation procedures; manufacture and procure flight test articles and hardware; continue flight test planning activities; ID and deliver overhaul special test equipment. *FY 2011 OCO Plans:* In FY 2011 OCO: Not Applicable.					
MAJOR THRUST: STRATEGIC RADAR REPLACEMENT (SR2) *FY 2009 Accomplishments:* In FY 2009: NA *FY 2010 Plans:* In FY 2010: SR2 program will seek to attain Material Development Decision (MDD) approval in 2Q FY 2010; Immediately following the MDD Approval, program activities will commence with risk reduction studies in support of the Material Solution Analysis phase. Additionally, the program will conduct an Analysis of Alternatives (AoA) led by Air Combat Command and Air Force Global Strike Command.	0.000	12.425	35.923	0.000	35.923

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
The SR2 program will undertake other activities, as required to support a Milestone A decision in FY 2011. *FY 2011 Base Plans:* In FY 2011: The SR2 program will seek a Milestone A decision and continue the risk reduction activities as necessary to prepare the Capabilities Development Document (CDD). *FY 2011 OCO Plans:* In FY 2011 OCO: Not Applicable.					
MAJOR THRUST: MODE S/5 IDENTIFICATION FRIEND OR FOE (IFF). *FY 2009 Accomplishments:* In FY 2009: N/A *FY 2010 Plans:* In FY 2010: N/A *FY 2011 Base Plans:* In FY 2011: Define requirements and begin development of the Group A hardware and control panel; conduct system safety analysis of APX-119 FMECA as it relates to the aircraft integration. Address aircraft integration issues related to space, weight, electrical power, hydraulics, cooling impacts. Begin development of test strategy to define criteria to verify the system meets B-52 requirements. Develop source control drawings, develop/revise wiring diagrams, harness designs and installations drawings. Procure APX-119 test article and Common Control Panel prototype to begin lab testing of design. *FY 2011 OCO Plans:* In FY 2011 OCO: Not Applicable.	0.000	0.000	8.583	0.000	8.583
	0.958	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: ELECTROMAGNETIC PULSE TEST (EMP). Develop plan required for full scale EMP test of B-52's nuclear mission essential systems in FY 2012/2013. *FY 2009 Accomplishments:* In FY 2009: Develop EMP Protective Maintenance Evaluation Test Plan and develop B-52H aircraft level EMP test procedures. Identify electrical bonds, identify Transient Protection Modules (TPM), research test methodology and concepts, and document systems and recommended test methodologies. *FY 2010 Plans:* In FY 2010: N/A *FY 2011 Base Plans:* In FY 2011: N/A *FY 2011 OCO Plans:* In FY 2011 OCO: Not Applicable.					
MAJOR THRUST: 1760 IN THE BAY. *FY 2009 Accomplishments:* In FY 2009: N/A *FY 2010 Plans:* In FY 2010: Complete development of JDAM SMO for internal bomb bay weapons release. Architecture development study for Universal Armament Interface (UAI) compatible SMO. Initial production design for Group A (CSRL wiring and aircraft wiring), power supply, release equipment and fittings. Initial support for Air Armament Center (AAC) for weapons software and SSEK Eagle coordination.	0.000	8.000	24.522	0.000	24.522

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: In FY 2011: Systems engineering and development for additional SMO's including JASSM/JASSM-ER through Informal Qualification Test, Formal Qualification Test and Systems Integration Test; begin development of MALD/MALD-J SMOs; begin contractor test support for JASSM/JASSM-ER and supporting fielding documentation. Produce two prototypes to facilitate incremental development and testing of multiple SMOs; support initial test concept development and planning; support technical documentation and test mission development; support test instrumentation and modification to test aircraft. *FY 2011 OCO Plans:* In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	39.835	93.930	146.096	0.000	146.096

	FY 2009	FY 2010
Congressional Add: B-52 TACTICAL DATA LINK (TDL) will integrate Line of Sight (LoS) TDL, LINK-16 or new technologies alternative waveforms for inclusion in the CONECT architecture. *FY 2009 Accomplishments:* In FY 2009: N/A *FY 2010 Plans:* In FY 2010: Develop TDL architecture with an Information Support Plan. Perform an AoA. Develop candidate requirements/architecture definition for the B-52 CONECT architecture baseline. Perform SIL demonstration. Perform aircraft installation trade study.	0.000	6.000
	0.000	2.400

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010
Congressional Add: In FY 2009: N/A *FY 2009 Accomplishments:* In FY 2010: Perform a conceptual study of the requirements needed to harden the IWIU for existing Global Strike weapons and future nuclear 1760 capable weapons. The study will look at the feasibility of the integration of the Nuclear hardened IWIU (NHIWIU) on both the Common Strategic Rotary launcher and the SUU-67/72 pylons. *FY 2010 Plans:* In FY 2011: N/A		
Congressional Adds Subtotals	0.000	8.400

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0101113F: *B52 Squadrons, Aircraft Procurement BP11, Mods APAF*	11.501	61.270	69.074	0.000	69.074	156.560	118.892	111.257	139.417	0.000	0.000
• PE 0101113F (1): *B52 Squadrons, Aircraft Procurement BP13, ICS APAF*	0.000	0.000	3.443	0.000	3.443	0.000	0.000	0.000	0.000	0.000	0.000
• PE 0101113F (2): *B52 Squadrons, Aircraft Procurement BP16, Initial Spares APAF*	0.063	8.460	7.050	0.000	7.050	12.759	13.809	13.781	2.530	0.000	0.000
	0.000	0.000	6.732	0.000	6.732	0.000	0.000	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE 0101113F (3): *B52 Squadrons, Aircraft Procurement BP19, Depot Standup APAF*											

D. Acquisition Strategy

The B-52 CONECT EMD prime contract is sole source to Boeing, Wichita, KS. Boeing will design, develop, test and procure the necessary equipment from their subcontractors; develop engineering drawings, logistic and technical data, and time compliance technical order (TCTO) for installation on the B-52. The EMD effort includes installing and testing CONECT equipment on a B-52 aircraft. The B-52 trainer assets will be modified to support CONECT.

The B-52 EHF EMD prime contract is sole source to Boeing, Wichita, KS. Boeing will integrate the Government Furnished Property (GFP) Family of Beyond-Line-Of-Sight Terminals (FAB-T); develop engineering drawings, logistic and technical data, and time compliance technical order (TCTO) for installation on the B-52. The EMD effort includes installing and testing EHF equipment on a B-52 aircraft. The B-52 trainer assets will be modified to support EHF.

The B-52 Advanced Targeting Pod (ATP) program is sole sourced the software development contract to Boeing Integrated Defense Systems (IDS), Wichita. The ATP trainer development contract will be awarded by OO-ALC via their trainer contract.

The 1760 In the Bay program will acquire software development and hardware design via a sole-source contract to Boeing IDS, Wichita KS. Deliverables include an updated J-series weapon SMOs (software), a prototype modified CSRL, logistics support, ground and flight test support, and engineering drawings. Production of IWIU, required for each modified CSRL, and will be sole source to Boeing. The program will competitively procure the CSRL modification kits (cables, connectors, and mounting brackets).

The B-52 Anti-Skid program is a joint effort between OC-ALC and OO-ALC. The modification will be implemented via Program Depot Maintenance (PDM) and Contract Field Team (CFT).

The B-52 Strategic Radar Replacement (SR2) Program is in the initial stage of acquisition planning. The detailed acquisition strategy will be developed based on the results of market research and the Materiel Development Decision, and the Analysis of Alternatives.

The Mode S/5 IFF Program is in the initial stage of acquisition planning. A detailed acquisition plan will be developed based on the results of the engineering studies being completed by ARINC Engineering Services, Oklahoma City, OK. Proposed implementation via PDM and CFT.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101113F: *B-52 SQUADRONS*	**PROJECT** 675039: *B-52 Modernization*

The B-52 Electromagnetic Pulse (EMP) engineering assignment was contracted with Boeing IDS to deliver a plan and procedures for an active and passive EMP test of a USAF B-52 aircraft to be conducted at Patuxent River MD. This effort is a result of a STRATCOM requirement for a re-baselining and re-certification of B-52 EMP hardness. The last test was conducted in 1980.

The Tactical Data Link (TDL) will be sole sourced to Boeing IDS, Wichita KS for the integration of TDL based on the CONECT baseline. This is determined by Congressional language.

The Reconstitution of B-52 Nuclear Capability Study will be sole source to Boeing IDS utilizing an Engineering Assignment, Time and Materials via either the ESP or FAST IDIQ contracts.

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*	

Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CONECT EMD	SS/CPIF	Boeing Wichita, KS	28.383	31.233		5.092		0.000		5.092	Continuing	Continuing	0.000
B-52 EHF EMD	SS/CPIF	Boeing Wichita, KS	2.000	15.933	Apr 2010	34.294		0.000		34.294	Continuing	Continuing	0.000
Advanced Pod Functions	MIPR	WPAFB, OH Dayton OH	1.571	0.500	Jan 2010	0.000		0.000		0.000	0.000	2.071	0.000
Mode S/5 IFF EMD	C/CPFF	ARINC Engineering Services Oklahoma City, OK	0.000	0.000		8.583		0.000		8.583	Continuing	Continuing	0.000
Strategic Radar Replacement (SR2)	TBD/TBD	TBD TBD	0.000	7.000	Jan 2010	28.318	Jan 2011	0.000		28.318	116.000	151.318	0.000
Anti-Skid Replacement	Various/ Various	Boeing Wichita, KS, ES3, Clearwater UT	0.000	0.795	Mar 2011	5.353	Mar 2012	0.000		5.353	Continuing	Continuing	0.000
1760 In the Bay Software Development	C/CPFF	Boeing Wichita, KS	0.000	5.800	Aug 2010	5.700	Mar 2011	0.000		5.700	0.000	11.500	0.000
1760 In the Bay Production Development	TBD/TBD	Boeing Wichita, KS	0.000	2.000	Aug 2010	11.500	Mar 2011	0.000		11.500	0.000	13.500	0.000
Tactical Data Link	C/FFP	Boeing Wichita, KS	0.000	6.000	Jun 2010	0.000		0.000		0.000	0.000	6.000	0.000
Reconstitution of B-52 Nuclear Capability Study	TM	Boeing Wichita, KS	0.000	2.400	Jun 2010	0.000		0.000		0.000	0.000	2.400	0.000
		Subtotal	31.954	71.661		98.840		0.000		98.840			0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*	

Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks													

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CONECT Simulator/ Trainer	MIPR	509 ACSS OO-ALC: UT	0.410	3.100		11.900		0.000		11.900	Continuing	Continuing	0.000
B-52 EHF Simulator/ Trainer	MIPR	509 ACSS OO-ALC: UT	0.000	0.000		6.705		0.000		6.705	Continuing	Continuing	0.000
B-52 EHF Satellite Simulator - Lincoln Labs (FFRDC)	MIPR	ESC Hanscom AFB MA	0.000	4.000	Jan 2010	0.000		0.000		0.000	0.000	4.000	0.000
CONECT Program Support, Studies & Analysis	Various/ Various	Various Various	0.000	0.350		0.100		0.000		0.100	Continuing	Continuing	0.000
B-52 EHF Program Support, Studies & Analysis	Various/ Various	Various Various	0.000	0.100		0.100		0.000		0.100	Continuing	Continuing	0.000
Pod Software Trainer Upgrades	MIPR	OO-ALC UT	0.000	0.000		2.180	Jan 2011	0.000		2.180	0.000	2.180	0.000
Pod Test Support	TBD/TBD	Boeing Wichita KS	0.000	2.700	Feb 2010	0.000		0.000		0.000	0.000	2.700	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Pod Logistics Support	TBD/TBD	Wright-Patterson AFB OH	0.070	0.089	Jun 2010	0.000		0.000		0.000	0.000	0.159	0.000
Strategic Radar Replacement (SR2)	TBD/TBD	TBD TBD	0.000	1.000		2.000		0.000		2.000	5.000	8.000	0.000
1760 In the Bay Trainer/ Simulation Development	MIPR	OO-ALC UT	0.000	0.000		0.950	Jun 2011	0.000		0.950	0.000	0.950	0.000
		Subtotal	0.480	11.339		23.935		0.000		23.935			0.000

Remarks

Test and Evaluation ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CONECT 419 FLTS	PO	Edwards AFB CA	1.615	2.300		1.300		0.000		1.300	Continuing	Continuing	0.000
B-52 EHF 419 FLTS	PO	Edwards AFB CA	0.000	0.072	Jan 2010	0.267		0.000		0.267	Continuing	Continuing	0.000
CONECT JTIC	MIPR	Fort Huachuca AZ	0.200	0.200		0.200		0.000		0.200	Continuing	Continuing	0.000
B-52 EHF JTIC	MIPR	Fort Huachuca AZ	0.000	0.041		0.050		0.000		0.050	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*

Test and Evaluation ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Pod Test 419 FLTS	PO	Edwards AFB CA	0.000	5.269	Feb 2010	0.000		0.000		0.000	0.000	5.269	0.000
Strategic Radar Replacement (SR2)	PO	Edwards AFB CA	0.000	0.000		1.000		0.000		1.000	20.000	21.000	0.000
Anti-Skid Replacement	TBD/TBD	Edwards, AFB CA	0.000	0.000		0.643	Apr 2011	0.000		0.643	0.000	0.643	0.000
Electromagnetic Pulse (EMP) Test	TM	Boeing, Wichita KS	0.958	0.000		0.000		0.000		0.000	0.000	0.958	0.000
1760 In the Bay Government Test	PO	Edwards AFB CA	0.000	0.000		6.200	Jun 2011	0.000		6.200	0.000	6.200	0.000
		Subtotal	2.773	7.882		9.660		0.000		9.660			0.000

Remarks

Management Services ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CONECT 651 AESS	Various/ Various	Wright-Patterson AFB OH	3.478	4.970		3.601		0.000		3.601	Continuing	Continuing	0.000
B-52 EHF 651 AESS	Various/ Various	Wright-Patterson AFB	0.000	0.503		3.933		0.000		3.933	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force		DATE: February 2010
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Management Services ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		OH											
CONECT 327 ACSG	TBD/TBD	Tinker AFB OK	1.025	1.300		1.350		0.000		1.350	Continuing	Continuing	0.000
B-52 EHF 327 ACSG	TBD/TBD	Tinker AFB OK	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	0.000
ATP Management Support	TBD/TBD	Tinker AFB OK	0.125	0.050		0.000		0.000		0.000	0.000	0.175	0.000
Anti-Skid Replacement	TBD/TBD	Tinker AFB OK	0.000	0.000	Feb 2010	0.000		0.000		0.000	7.266	7.266	0.000
Strategic Radar Replacement (SR2)	TBD/TBD	Tinker AFB OK	0.000	4.425		4.605		0.000		4.605	15.593	24.623	0.000
1760 In the Bay Program Management Support	TBD/TBD	Tinker AFB OK	0.000	0.200	Aug 2010	0.172	Aug 2011	0.000		0.172	0.000	0.372	0.000
		Subtotal	4.628	11.448		13.661		0.000		13.661			0.000

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.835	102.330		146.096		0.000		146.096			0.000

Remarks

Total Prior Years Cost may include only FY 2009 data.

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101113F: *B-52 SQUADRONS*	PROJECT 675039: *B-52 Modernization*

B-52 Modernization Schedule

U.S. AIR FORCE

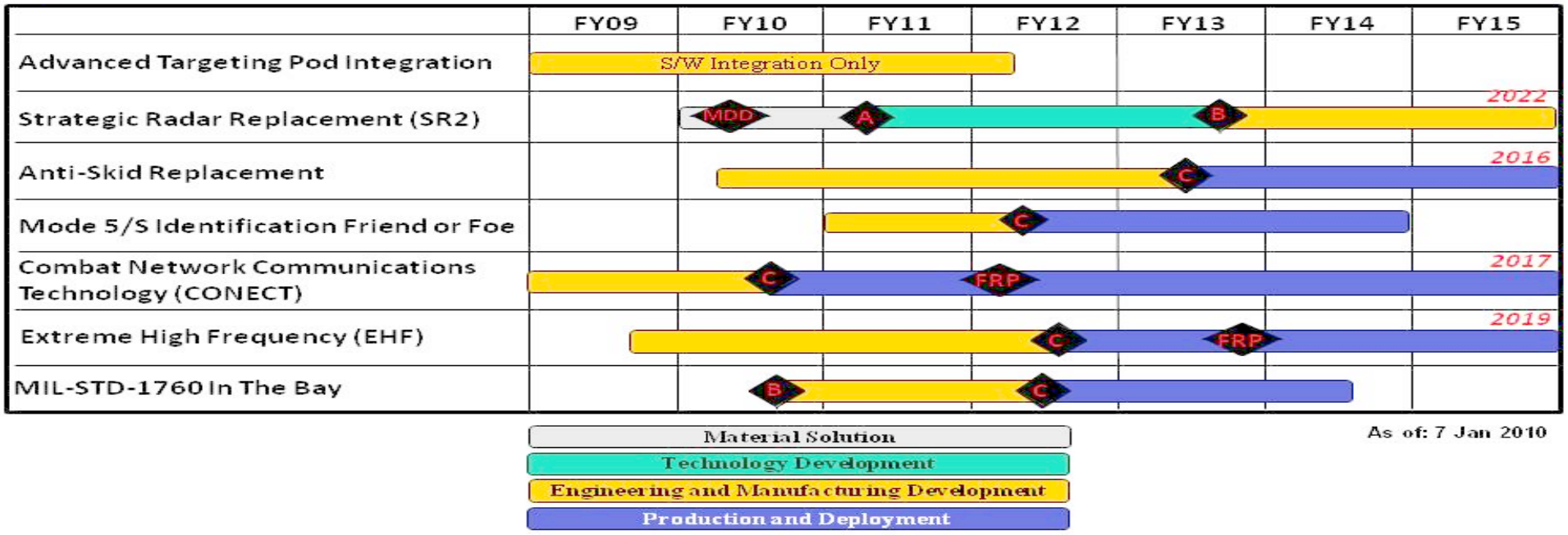

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101113F: *B-52 SQUADRONS*	**PROJECT** 675039: *B-52 Modernization*

Schedule Details

	Start		End	
Event	**Quarter**	**Year**	**Quarter**	**Year**
CONECT EMD	1	2009	4	2011
CONECT Ground/Flight Test Drop C	4	2009	2	2010
CONECT LRIP Milestone C	3	2010	3	2010
B-52 EHF EMD Increment 1	3	2009	4	2010
B-52 EHF EMD Increment 2	3	2010	4	2011
Anti-Skid EMD	2	2010	4	2011
Strategic Radar Replacement EMD	2	2010	4	2011
Targeting Pod Test	1	2011	1	2011
Mode S/5 IFF EMD	1	2011	4	2011
1760 In the Bay EMD	2	2010	4	2011
1760 In the Bay Milestone C	4	2011	4	2011