Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	39.664	7.515	0.499	-	0.499	-	-	-	-	0.000	47.678
FC5: *BCT UNATTENDED GROUND SENSORS*	39.664	7.515	0.499	-	0.499	-	-	-	-	0.000	47.678

Note

FY12: Funds realigned to higher priority requirements.

A. Mission Description and Budget Item Justification

As result of Army Acquisition Decisions, this program has been terminated after procurement of the first brigade. Therefore the FY12 RDT&E request is no longer required. FY11 funds are required for work completed prior to termination in 2Q FY11 and for all special and other termination costs.

The Brigade Combat Team (BCT) Unattended Ground Sensors (UGS) program is divided into two major configurations of sensing systems: URBAN-UGS (U-UGS), also known as Urban Military Operations in Urban Terrain (MOUT) Advanced Sensor System (UMASS); and TACTICAL-UGS (T-UGS), which includes Intelligence, Surveillance and Reconnaissance (ISR)-UGS and Chemical, Biological, Radiological and Nuclear (CBRN)-UGS. U-UGS - Will provide a network-enabled reporting system for Situational Awareness (SA) and force protection in an urban setting, as well as residual protection for cleared areas of urban MOUT environments. The U-UGS system can support BCT operations by monitoring urban choke points such as rooms, halls, attics, basements, sewers, culverts, tunnels, caves, and alleyways. They can be hand-emplaced by Soldiers or robotic vehicles either inside or outside buildings and structures. When a platoon or squad clears a building, U-UGS are left behind to perform surveillance that would otherwise require dedicated soldiers.

The U-UGS system provides a self-organizing wireless network that consists of three configuration items; personnel detect sensors, imaging sensors, and gateways:

1. Personnel Detect Sensors provide dual mode, passive infrared and RF microwave motion sensing for "trip-wire"detection of intruders.
2. Imaging Sensors provide electro-optical visual imaging with a near-infrared illuminator for operation in full darkness.
3. Gateways organize and manage the sensor network, and communicate sensor data to BCT C2 Joint Tactical Radio System (JTRS) systems and to the local dismounts.

T-UGS - Tactical-UGS (T-UGS) includes Intelligence, Surveillance and Reconnaissance (ISR)-UGS and Chemical, Biological, Radiological and Nuclear (CBRN)-UGS. The UGS (T-UGS) are designed for remote tactical operations in open spaces, at road choke points, avenues of approach, etc, and are designed to be emplaced by hand or by remote deployment methods. T-UGS provides ISR and CBRN awareness to the BCT areas not covered by manned/unmanned ground/air vehicles. Packaging the common form factor enables simplified scalability and upgrade paths for future technology insertion, while the distributed sensing capability enhances mission flexibility and system versatility. The T-UGS system consists of five configuration items (nodes), each containing a unique set of sensing capabilities, and sharing a common hardware form factor.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604664A: *FCS Unattended Ground Sensors*

1. The T-UGS ISR sensor node provides for vehicle and personnel detection capabilities via seismic, acoustic and magnetic sensors. Seismic sensors are the primary means of personnel detection. The principal means of vehicle detection and tracking are the acoustic bearing sensors. The ISR-UGS will be modular and composed of tailorable sensor groups using multiple ground-sensing technologies. Multiple sensors support precision location and simultaneous tracking of multiple targets.
2. When confirmed as a valid target of interest, Electro Optical/Infrared (EO/IR) sensor nodes will autonomously capture multiple images of the target.
3. The CBRN node provides for chemical, biological, radiological, and nuclear sensing and reporting capabilities.

The final component is the Long-Haul gateway node that provides radio communications and integration into the BCT network. The longhaul gateway provides the interoperable link between all sensors (SUG-V, UAV CLS-I, U/T-UGS) and the Network Integration Kit (NIK). Without this critical link the network between systems and the user is nonexistent.

FY11 funding represented in this document does not reflect the restructure to the program as a result of the recently signed Acquisition Decision Memorandum

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	26.778	7.515	1.071	-	1.071
Current President's Budget	39.664	7.515	0.499	-	0.499
Total Adjustments	12.886	-	-0.572	-	-0.572
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	13.800	-			
• SBIR/STTR Transfer	-0.914	-			
• Adjustments to Budget Years	-	-	-0.572	-	-0.572

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
FC5: *BCT UNATTENDED GROUND SENSORS*	39.664	7.515	0.499	-	0.499	-	-	-	-	0.000	47.678
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

As result of Army Acquisition Decisions, this program has been terminated after procurement of the first brigade. Therefore the FY12 RDT&E request is no longer required. FY11 funds are required for work completed prior to termination in 2Q FY11 and for all special and other termination costs.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*

2. When confirmed as a valid target of interest, Electro Optical/Infrared (EO/IR) sensor nodes will autonomously capture multiple images of the target.
3. The CBRN node provides for chemical, biological, radiological, and nuclear sensing and reporting capabilities.

The final component is the Long-Haul gateway node that provides radio communications and integration into the BCT network. The longhaul gateway provides the interoperable link between all sensors (SUG-V, UAV CLS-I, U/T-UGS) and the Network Integration Kit (NIK). Without this critical link the network between systems and the user is nonexistent.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Contractor: T-UGS/U-UGS Increment 1 ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Oversee delivery of 14 prototypes for Test and Analysis of New Form Factor UGS (to include radio, spike, acoustic sensor, etc.) and U-UGS gateway. Complete robust reliability post test events. Support RAM-T data generation for MS-C LRIP decision and support LUT-10 activities. Completed U-UGS Software Qualification Test in 3QFY10; U-UGS System Environmental Quality Test; U-UGS System Performance Quality Test; T-UGS Software Qualification Test in 3QFY10; T-UGS System Environmental Quality Test in 4QFY10; T-UGS Operations Qualification Tests and Reliability Tests. Delivered an additional 18 sets of UGS communication range extension prototypes to support LUT-10 efforts.	39.400 0	-	-
Title: Contractor: T-UGS/U-UGS Inc 1, CP 13/14 & Contractor Special Termination ***Articles:*** ***Description:*** Funding is provided for the following effort ***FY 2010 Accomplishments:*** Begin planning efforts to support CP13/14. ***FY 2011 Plans:*** T-UGS/U-UGS Increment 2 FY11: Oversee delivery of improved prototype hardware to support Technical Field Tests, and further operational test. Complete engineering upgrade to HW and software configuration of the Range Extension Relay .Continued reliability growth; improved sensor/software modalities and deliver soldier carrying MOLLE packs.	0.264 0	7.515 0	-
Title: Government Integration Testing ***Description:*** Funding is provided for the following effort ***FY 2012 Plans:***	-	-	0.499

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Includes government support for upcoming integration testing.			
Accomplishments/Planned Programs Subtotals	39.664	7.515	0.499

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0604646A: *Non-Line of Sight - Launch System*	88.205	81.247								0.000	169.452
• 0604660A: *FCS Manned Ground Vehicles & Commmon Grd Vehicle Components*	231.103									0.000	231.103
• 0604661A: *FCS System of Systems Eng & Program Management*	847.011	568.711	383.872		383.872		518.188	648.502	352.069	0.000	3,808.398
• 0604662A: *Reconnaissance (UAV) Platforms*	92.444	50.304								0.000	142.748
• 0604663A: *FCS Unmanned Ground Vehicles*	122.418	249.948	143.840		143.840		106.480	131.880	32.009	0.000	911.047
• 0604665A: *FCS Sustainment & Training R&D*	685.524	610.389					251.761	254.232	181.558	0.000	2,187.185
• WTCV G86200: *FCS Spin Out Program*	210.909									0.000	210.909
• ACFT A00015: *BCT Unmanned Aerial Veh (UAVs) Inc 1*		44.206								0.000	44.206
• OPA B00001: *BCT Unattended Ground Sensor*		29.718								0.000	29.718
• OPA B00002: *BCT Network*		176.543								0.000	187.068
• OPA B00003: *BCT Network Incr 2*							229.528	187.955	179.653	0.000	768.167
• OPA F00001: *BCT Unmanned Ground Vehicle*		20.046	24.805		24.805					0.000	48.096
• OPA F00002: *BCT Unmanned Ground Vehicle Incr 2*			11.924		11.924		422.192	834.171	696.603	0.000	2,414.904

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPA G80001: *BCT Training/ Logistics/Management*		61.581	149.308		149.308		49.792	28.259		0.000	435.142
• OPA G00002: *BCT Training/ Logistics/Managmeent Incr 2*			57.103		57.103		441.250	347.466	273.354	0.000	1,308.265

D. Acquisition Strategy

A 23 June 2009 Acquisition Decision Memorandum (ADM) directed the cancellation of the FCS (BCT) acquisition program. It also instructed the Army to transition to an Army modernization plan consisting of a number of integrated acquisition programs. At that time, the SO E-IBCT was designated a pre-MDAP, with a Milestone C decision scheduled for the first quarter FY10. A follow-on ADM was issued 9 July 2009. In it, the Army was directed to continue efforts to improve the brigades beyond the Early Infantry Brigade Combat Team acquisition until a standalone program(s) is defined later in 2010. An Army BCT Modernization Defense Acquisition Board (DAB) was then held on October 16, 2009 to review the Army's plans for the post-Future Combat Systems efforts and confirm the Army brigade modernization acquisition plans were consistent with the Secretary of Defense's guidance. An ADM issued after this DAB stated: "The approach, for Increment 1 (Early-Infantry Brigade Combat Team (E-IBCT)) and the Ground Combat Vehicle (GCV) effort, is consistent with the Secretary's guidance and each is being positioned for more in-depth review and acquisition decisions later in 2009." The Increment 1 E-IBCT Milestone C took place 22 December 2009 and was approved in an ADM dated 24 December 2009. The Program Executive Office-Integration (PEO-I) has modified the existing contract to be compliant with the aforementioned ADMs. On 12-Jan 2011 a follow on DAB approved procurement of brigades 2 & 3. This budget justification reflects the latest OSD DAB for Increment 1 (E-IBCT) program and the follow-on IBCT modernization program as approved in RMD XXXX.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government SEPM	Various	PM:Warren, MI	-	-		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	-		-		-		-			0.000

Remarks

1. Prior to FY10 all Management Services costs for this project are included in 0604661 FCS SoS Engineering and Program Management.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
T-UGS/U-UGS See Remark 2	Various	The Boeing Company:Various	-	-		-		-		-	Continuing	Continuing	0.000
T-UGS/U-UGS Inc 1, CP 13/14 & Contractor Special Termination	Various	The Boeing Company:Various	-	7.515		-		-		-	Continuing	Continuing	0.000
		Subtotal	-	7.515		-		-		-			0.000

Remarks

1: Subcontractor: Textron Systems, Intelligent Battlefield System Division - Willington, MA

2. The FY10 funding does not include the $13.8M which was approved by congress in Reprogramming Action 10-11 PA.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	Various	various:various	-	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		-		-		-			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604664A: *FCS Unattended Ground Sensors*	PROJECT FC5: *BCT UNATTENDED GROUND SENSORS*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government SEPM/Test/M&S	Various	PM/TARDEC:Warren, MI	-	-		0.499		-		0.499	Continuing	Continuing	0.000
		Subtotal	-	-		0.499		-		0.499			0.000

Remarks

Prior to FY12 all SOS Test and Evaluation costs for this project are included in 0604661 FCS SoS Engineering and Program Management project.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	7.515		0.499		-		0.499			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604664A: *FCS Unattended Ground Sensors*	**PROJECT** FC5: *BCT UNATTENDED GROUND SENSORS*

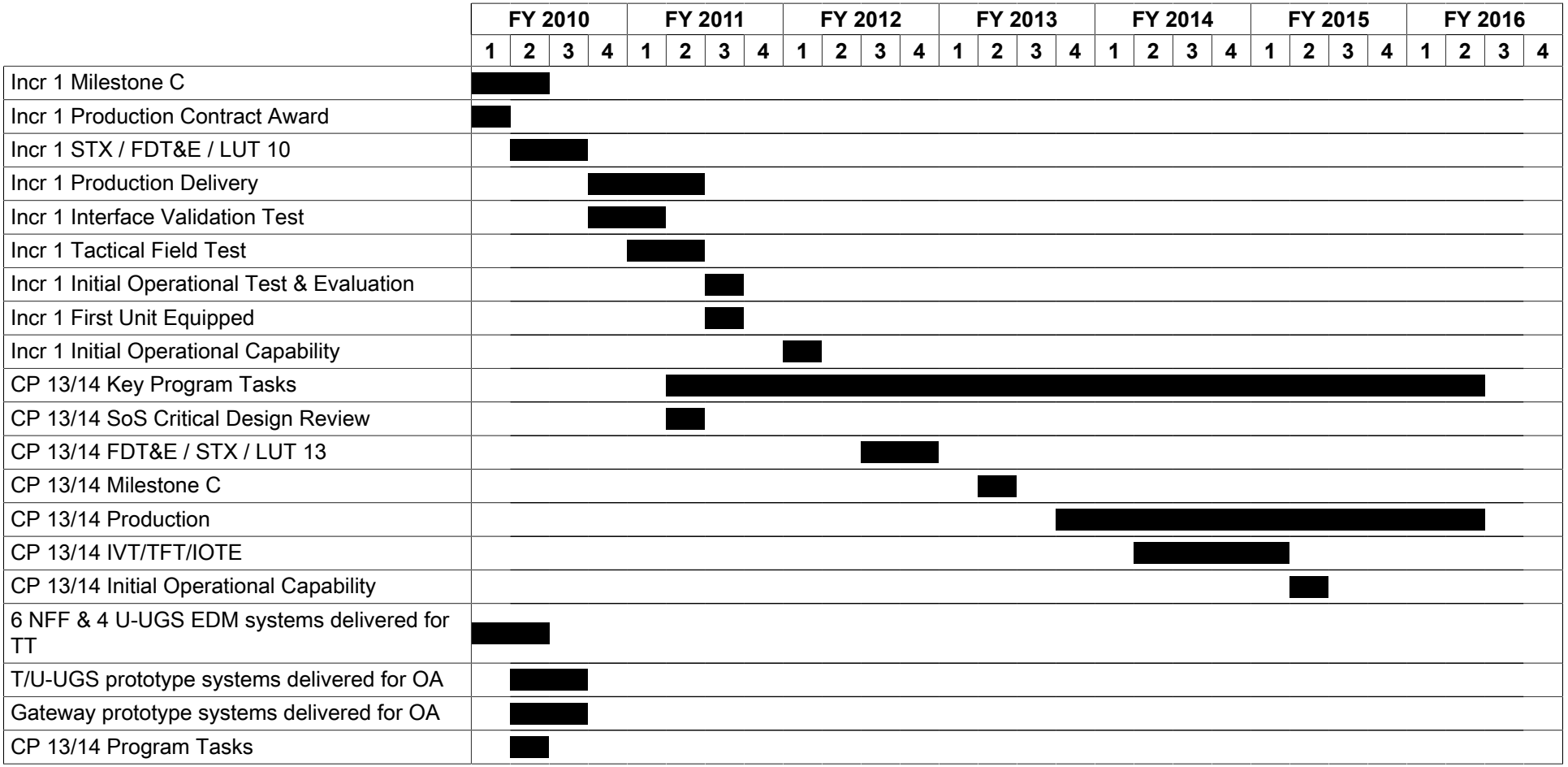

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604664A: *FCS Unattended Ground Sensors*	**PROJECT** FC5: *BCT UNATTENDED GROUND SENSORS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Incr 1 Milestone C	1	2010	2	2010
Incr 1 Production Contract Award	1	2010	1	2010
Incr 1 STX / FDT&E / LUT 10	2	2010	3	2010
Incr 1 Production Delivery	4	2010	2	2011
Incr 1 Interface Validation Test	4	2010	1	2011
Incr 1 Tactical Field Test	1	2011	2	2011
Incr 1 Initial Operational Test & Evaluation	3	2011	3	2011
Incr 1 First Unit Equipped	3	2011	3	2011
Incr 1 Initial Operational Capability	1	2012	1	2012
CP 13/14 Key Program Tasks	2	2011	2	2016
CP 13/14 SoS Critical Design Review	2	2011	2	2011
CP 13/14 FDT&E / STX / LUT 13	3	2012	4	2012
CP 13/14 Milestone C	2	2013	2	2013
CP 13/14 Production	4	2013	2	2016
CP 13/14 IVT/TFT/IOTE	2	2014	1	2015
CP 13/14 Initial Operational Capability	2	2015	2	2015
6 NFF & 4 U-UGS EDM systems delivered for TT	1	2010	2	2010
T/U-UGS prototype systems delivered for OA	2	2010	3	2010
Gateway prototype systems delivered for OA	2	2010	3	2010
CP 13/14 Program Tasks	2	2010	2	2010