Statement Of Work
For The
U.S. Army Current Force
Battlefield Target Identification Device (BTID)
Unit Procurement Cost
Reduction Program

CONTRACT NO: W9113M-05-C-0147

24 June 2005

Prepared by:

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Prepared for:

US ARMY SPACE & MISSILE DEFENSE COMMAND
HUNTSVILLE, AL

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1.0 Scope

This Statement of Work (SOW) specifies the tasks and efforts to be performed by Raytheon Company, hereafter referred to as Raytheon, to reduce A-Kit and B-Kit costs and to provide an affordable millimeter wave Combat ID (CID) system for the Current Force that is NATO STANAG 4579 compliant. These tasks include subsystem cost reduction and miniaturization, coordination, BTID/FLIR software and hardware updates, and test and demonstration including RF bench testing, cart/tripod testing, platform integration and test, and engineering support.

1.1 Objectives

The PM-TIMS sponsored cost reduction CID effort will enable the reduction of A-Kit and B-Kit costs to provide a more affordable millimeter wave CID system for the Current Force compared with the existing BTID system. In addition, tests and demonstrations will help to ensure the CID systems are STANAG 4579 compliant and demonstrate BTID platform compatibility. These tasks include:

- [redacted]
- Redesign of the BTID subsystem components to reduce system cost as well as address system size, weight, and power (SWaP).
- Perform RF bench testing with operational Coalition Combat Identification (CCID) Advance Concept Technology Demonstration (ACTD) BTID units to ensure NATO STANAG 4579 compliance.
- Perform cart and platform testing and demonstration to ensure full BTID interoperability and platform compatibility.

1.2 System Description

The Raytheon Prototype Combat Identification (CID) to be developed for the Current Force will consist of the following components:

- Communications Electronics Interface Unit (CEIU) with NATO Waveform capability, which includes the Red/Black Processor Board, Cryptographic Mezzanine Card, and new Multi-Source Power Supply
- Transponder Antenna Subsystem (TAS), which includes the Omni-Directional Antenna, Miniaturized Transceiver Module, and Integrated Global Position System (GPS) Capability
- Interrogator Antenna Subsystem (IAS), which consists of an integrated Interrogator Antenna and Transceiver Module
- Associated cables and mounting hardware for a High Mobility Multi-purpose Wheeled Vehicle (HMMWV) platform

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2.0 Applicable Documents

Table 1 provides a list of documents that make up part of this statement of work to the extent specified herein. Where the requirements of these documents conflict with the requirements of this document, the latter shall take precedence.

Table 1, Referenced Documents

Document Number	Revision Date	Description
STANAG 4579	V2, 4 May 2001	Military Agency for Standardization (MAS) Standardization Agreement (STANAG), Subject: Battlefield Target Identification Device
W9113M-05-C-0147	29 April 2005	BTID Cost Reduction Letter Contract

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3.0 Requirements

3.1 Technical Requirements

[redacted]

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[redacted]

[redacted]

[redacted]

[redacted]

3.2 Program Requirements

Raytheon shall perform the management and system engineering efforts required to accomplish the work stated herein. The following WBS shall be used as a guide for program task assignments as well as Program Planning, Management, and Control and monthly reporting status. Key tasks include program planning, requirements analysis, architecture definition and design, code and unit test, integration, reviews, metrics and estimates, configuration management, and quality.

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Table 2, Current Force BTID UPC Reduction Program Work Breakdown Structure

WBS Number	Description
A	**BTID-FLIR Integration & Demonstration (Task 1)**
AA	**BTID Upgrades (Raytheon – Fort Wayne)**
AAA001	Design and Develop BTID Software Upgrades
AAA002	Design and Build Interface Cables
AAA003	Meetings & Phone Support
AAA004	Update BTID System Documentation
AB	**FLIR Upgrades (Raytheon – Plano)**
ABA001	Design and Develop FLIR Software Upgrades
AC	**Integration & Demonstrations**
ACA001	Develop Detailed Integration Plan
ACA002	Integration & Test in Engineering Lab
ACA003	Installation & Test on Demonstration Vehicle
ACA004	Demonstration @ Raytheon – Plano
WBS Number	**Description**
B	**CID For Current Force (Task 2)**
BA	**Program Planning, Management, & Control**
BAA001	Program Planning, Management, and Control
BAA002	Travel
BAA003	Gate 5
BB	**System Engineering**
BBA001	Systems Engineering (Planning/Mgmt/Control)
BBA001	Requirements and Architecture Development
BBA001	Design and Development for Manufacturing
BBA001	IV&V Support
BBA001	CM/QA
BBA002	Gate 6
BBA003	Gate 7
BBA004	Gate 8
BC	**CID Prototype Development**
[redacted]	[redacted]
[redacted]	[redacted]

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WBS Number	Description
[redacted]	[redacted]
BCA004	Multi-source Power Supply
BCA005	Chassis Updates & Packaging
BCA006	Software Development and Support
BCA007	Build, I&T and ATP (6 Units)
BCA008	Support/Test Equipment
BCA009	Embedded GPS
BCA010	CID Prototype Material
BD	**Antenna Subsystems**
BDA	IAS Development
[redacted]	[redacted]
BDA002	Antenna Subcontract (IOT)
BDA003	Chassis & Packaging Development
BDA004	IAS Build and I&T (2 Units)
BDB	TAS Development
BDB001	Transceiver Design Support
BDB002	Chassis & Packaging Development
BDB003	TAS Build and I&T (6 Units)
BE	**Demonstration**
BEA001	Fort Wayne Site Demonstration

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3.3 Deliverable Items

The items delivered as part of this program are specified below in Table 3:

Table 3, Current Force BTID UPC Reduction Program Deliverable Items

Deliverable Items	Format/Description	Schedule
Six (6) Prototype Current Force CID Systems	Two (2) Interrogator / Transponders Four (4) Transponders	As denoted in Figure 3.1 program schedule.
Agenda/Meeting Minutes/Attendee List	Contractor Format	Agenda submitted 15 days before meeting. Minutes and Attendee List submitted 10 days after meeting.
Integrated Master Schedule	Contractor Format	First submission 45 days after receipt of order, subsequent submissions monthly.
Performance and Cost Report	Contractor Format	First submission 45 days after receipt of order, subsequent submissions monthly.
Producibility Analysis Report	Contractor Format	First submission 30 days prior to final prototype testing, 30 days for Government review, subsequent submissions every 90 days until contract completion.
Design-to-Cost /Life-Cycle-Cost and Variance Analysis Report	Contractor Format	First submission 30 days prior to final prototype testing, 30 days for Government review, subsequent submissions every 90 days until contract completion.
Validation Report	Contractor Format	First submission 30 days after completion of B-Kit test, 30 days for Government review, and final submission 20 days after receipt of Government comments.
Acceptance Test Plan	Contractor Format	First submission 90 days prior to B-Kit test/testing, 45 days for Government review, and final submission 30 days after receipt of Government comments.
Subsystem Analysis Report	Contractor Format	First submission of the Subsystem Analysis Report 30 days prior to PDR and CDR, 30 days for Government review, and final submission within 30 days after PDR and after CDR.

3.4 BTID Interoperability Program GFE

Raytheon shall identify any Government Furnished Equipment (GFE) required for the performance of the work stated herein. It is assumed that the Government will provide the following:

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Figure 1, GFM/GFI/GFE/CFE Requirements

GFE/GFM - BTID Cost Reduction

PART #	DESCRIPTION	QTY	TITLE	CONTRACT	Current Location	Need Date
0N648056	HELLATITE Crypto Module(s)	10	USA	DAAB07-00-C-J006	Raytheon FW	Aug-05
KOI-18	CRYPTO KEY LOAD DEVICE	2	USA	DAAB07-00-C-J006	Raytheon FW	Aug-05
KYK-13	CRYPTO KEY LOAD DEVICE	2	USA	DAAB07-00-C-J006	Raytheon FW	Aug-05
CZY-10	CRYPTO KEY LOAD DEVICE	2	USA	DAAB07-00-C-J006	Raytheon FW	Aug-05
AKZTA9990	KEYS	1 CANISTER	USA	DAAB07-00-C-J006	Raytheon FW	Aug-05
AKZTB9990	KEYS	1 CANISTER	USA	DAAB07-00-C-J006	Raytheon FW	Aug-05
AS-4503/U, NSN 5985-01-458-7049	Omni Antennas and Masts	50	USA	DAAB07-00-C-J006	Raytheon FW	Early May05
AN/TAS-8	Long Range Acquisition Sensor - LRAS	1	USA	DAAB07-002-C-J606*	Raytheon Texas	Jun-05
Unknown	Highly Mobile Multi-Wheeled Vehicle, HMMWV	1	USA	DAAB07-002-C-J606	Raytheon Texas	Jun-05
902714-801	BTID Interrogator Systems - complete	3	USA	DAAB07-01-C-L543	Raytheon FW	Nov-05
[redacted]						

3.5 Program Reviews & Meetings

Raytheon shall attend and participate in customer-specified meetings as required. It is assumed that all other meetings will be held at the Raytheon Fort Wayne facilities.

3.6 Program Schedule

A program schedule is attached to this document.

3.7 Support for Other Testing and Demonstrations

Raytheon shall provide engineering support for various tests and demonstrations as requested by the Army within the scope of this contract.

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Figure 2, Current Force BTID UPC Reduction Program Milestones

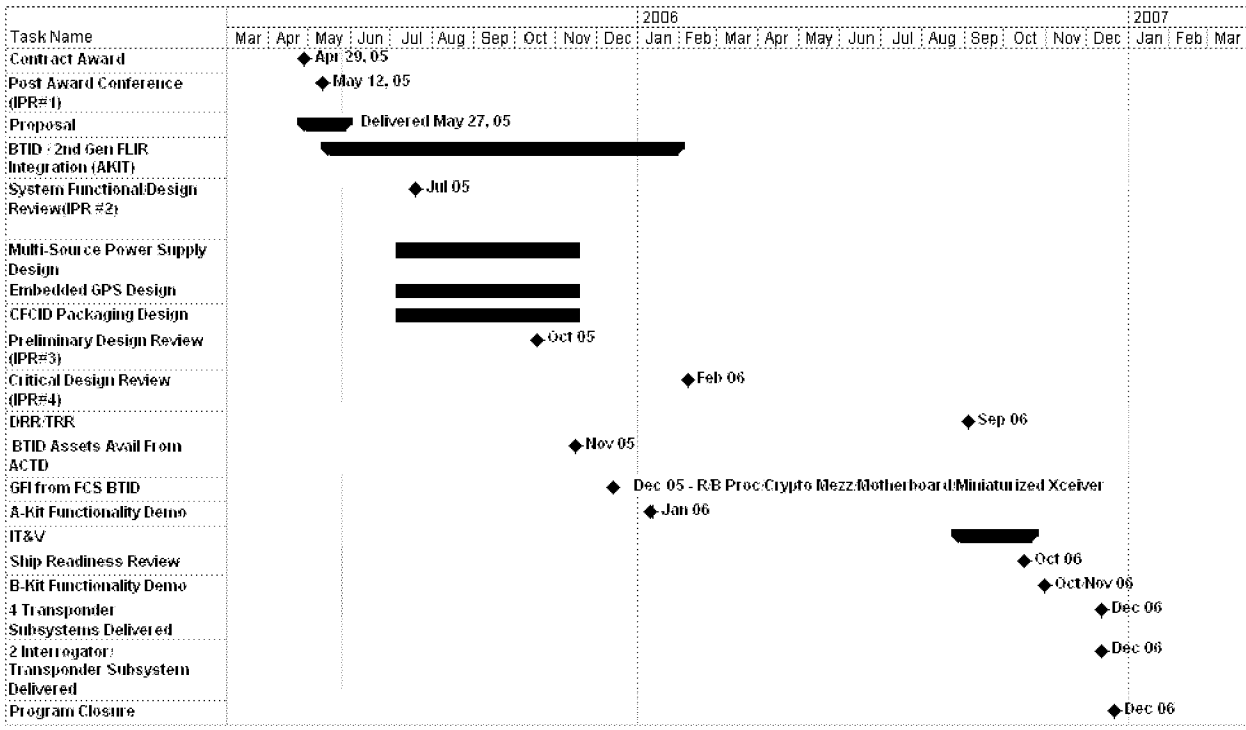
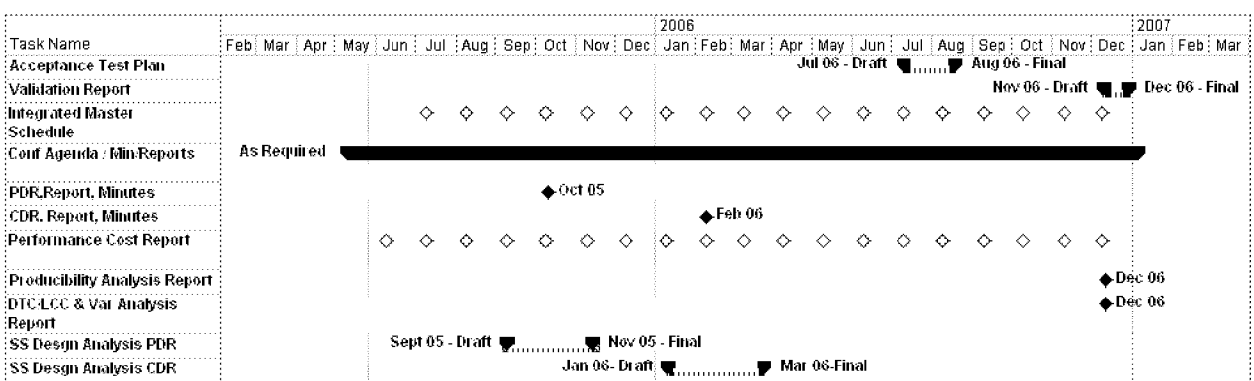


Figure 3, Current Force BTID UPC Reduction CDRL Schedule



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APPENDIX A

LIST OF ACRONYMS AND ABBREVIATIONS

Unless otherwise required, acronym lists should be created in table format, similar to the following example.

Acronym	Definition
ACTD	Advanced Concepts Technology Demonstration
ACTD BTID	BTID Configuration for BTID ACTD Program
ATP	Acceptance Test Plan
BTID	Battlefield Target Identification Device
CCID	Coalition Combat Identification
CDRL	Contract Data Requirements List
CEIU	Communications Equipment Interface Unit
CE-LCMC	Communications Electronic-Life Cycle Management Command
CID	Combat ID
CM	Configuration Management
CTS	Continuous Transverse Stub
DTC	Design-To-Cost
[redacted]	
FLIR	Forward Looking Infrared Sensor
GFE	Government Furnished Equipment
GFI	Government Furnished Information
GFM	Government Furnished Material
GPS	Global Positioning System
HMMWV	High-Mobility Multi-purpose Wheeled Vehicle
IAS	Interrogator Antenna Subsystem
I&T	Integration & Test
IV&V	Integration, Verification, & Validation
LCC	Life-Cycle-Cost
LRAS3	Long Range Acquisition Scout Surveillance System
MAS	Military Agency for Standardization
NATO	North Atlantic Treaty Organization
NC	No Cost
PM TIMS	Product Management Target Identification & Meteorological Sensors
QA	Quality Assurance
RF	Radio Frequency
STANAG	Standard NATO Agreement

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Acronym	Definition
SOW	Statement of Work
SWaP	Size, Weight, and Power
TAS	Transponder Antenna Subsystem
UPC	Unit Procurement Cost
WBS	Work Breakdown Structure

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