Husky Mounted Detection Systems (HMDS)
(version 2.0)
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A Milestone Annex
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This System Training Plan (STRAP) is preliminary. Front end analysis (mission, task, job) is ongoing. MSCoE – MANSCEN will amend and update this STRAP as details solidify.

MSCoE – MANSCEN is the proponent for this STRAP. Send comments and recommendations directly to: Martel P Goldman

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1.0 System Description

The Husky Mounted Detection System (HMDS) is the primary system added to the Husky vehicle that utilizes Ground Penetrating Radar (GPR) technology to detect and mark underbelly (not side attack) Anti-Tank (AT) landmines and Explosive Hazard Devices (EHD) that are deployed on primary and secondary roads.

The HMDS provides route clearance patrol capabilities to detect and mark the location of buried IED’s pressure plates, metallic threats, non-metallic threats, and AT landmines. It has the capabilities to detect both metallic-cased and low metal threats. The HMDS consists of a Ground Penetrating Radar (GPR) to detect buried threats: a GPR positioning subsystem mounted on the Husky front module to provide for installation of the GPR; both automatic and manual height control for following rough road surfaces; a marking system that sprays the road surface above a detected buried threat with dye.

A precision location/navigation subsystem to provide for accurate automatic marking; a mission computer to control all system functions; a Control and Display Unit (CDU) with a Graphical User Interface (GUI) and power switches mounted inside the Husky cab to provide the war fighter - machine interface; a power distribution assembly to route low voltage power to all subsystem; and interconnecting cables to carry signals and power. The system is installed as a kit on Mark II and Mark III Huskies, and is operated by the Husky operator.

The Husky Mounted Deep Buried Detection Capability will detect and mark deep buried metallic IEDs and metallic encased caches. The explosive hazards marking capability will accurately mark suspected IEDs and caches.

The Husky Semi-Autonomous Control Capability will enable an operator to semi-autonomously control all functions of a Husky in an unmanned mode from inside the Mine Protected Clearance Vehicle at standoff; and will remove the operator from the proximity of the effects of explosive hazards. The operator will be able to deactivate the Semi-Autonomous Control Capability and operate the Husky in the manned mode.
2.0 Target Audience

General Purpose: Users are the primary Military Occupational Specialty (MOS) assigned to the Organization receiving a particular configuration of equipment. These users shall include Officers, Warrant Officers, Noncommissioned Officers (NCO), and lower Enlisted Soldiers assigned to Route and Area clearance companies.

a. Operators: MOS 12B, (Combat Engineer)

b. Maintainers: MOS 91L (Construction Equipment Repairer), 919A (Engineer Equipment Repair Technician) and 91B (Wheeled Vehicle Mechanic).

c. Supporting MOSs: MOS 91W (Metal Worker), 91E (Allied Trades Specialist), 91K (Armament Repairer), 94F (Computer/Detection System Repairer), 94M (Radar Systems Repairer), 21U (Digital Maintainer), 12A (Combat Engineer Officer), 89D (Explosive Ordnance Disposal), and any General Purpose Users (GPU) as designated by unit Commanders.
3.0 Assumptions

a. Maneuver Support Center of Excellence (MSCoE), United States Army Combined Arms Support Command (USACASCOM), material developer (MATDEV), and training developer (TNGDEV) shall review and approve all training, training products (i.e. IMI, Simulations/Simulators, Training Enablers), and technical manuals (TM) for acceptability prior to fielding.

b. The PM will provided resources to support training identified in the capabilities document, System Training Plan (STRAP) and Training Support Requirement Document (TSRD). HMDS common critical task training will be conducted and reinforced at the unit level. Units shall be responsible for sustainment training subsequent to receiving NET and DTT.

c. The HMDS will not generate a new MOS or Additional Skill Identifier (ASI). There will be no increase in aptitude requirements to operate, maintain, or support the MMPV equipment.

d. The Program Manager (PM) shall resource NET requirements to support operational testing, First Unit Equipped (FUE), and all subsequent NET and DTT.

e. Funds will be available to support Training and Doctrine Command's (TRADOC) participation in training development, Integrated Logistic Support Management Team meetings, in-process reviews, Post Fielding Training Effectiveness Analysis (PFTEA), and contractor training in support of developmental and operational tests, Instructor and Key Personnel Training (I&KPT), TM VAL/VER, Training Development (TADSS), LOGDEMO, TM/Lesson Review, IPTs and NET/DTT.

f. Training equipment and materials identified in the NET Plan will be developed and available in time and in sufficient quantity to support training. Institutional training materials and equipment will be available 12 months prior to FUE.

g. The required resources, such as instructors, TNGDEV, Training Aid, Devices, Simulators and Simulations (TADSS), ranges, and facilities identified in this document, will be made available to support and maintain HMDS training programs.

h. All software developed to facilitate system training will meet US Army acceptance criteria for continuous testing of Sharable Content Objective Reference Model (SCORM) V1.2 conformant courseware.

i. The TRADOC Deputy Chief of Staff of Operations and Training (DCSOPS&T) will resource MSCoE and USAES with instructors to conduct DTT.
j. Additional Operations and Maintenance-Army Funding Requirements will be included after the contract has been awarded.
4.0 Training Constraints

All currently envisioned training is contingent upon 100% availability of the resources.

a. General: Because of the procurement process starting with the Capabilities Production Document (CPD), institutional and unit training is to be incrementally introduced.

b. Manpower: Present TRADOC policy restricts the growth of institutional courses. The inability to increase the course training time can impact the quality of training given.

Recommendation: Incrementally establish a functional and SSD course for training Clearance Companies allowing the Engineer/Ordnance Officer Education System (OES) and Engineer/Ordnance NON Commissioned Officer System (NCOES) to adapt training geared towards their respective skill levels.

c. Personnel:

1) Training: TRADOC is minimizing the use of military assets in support of dedicated New Equipment Training Teams (NETT). The Material Developer must continue to finance deployment of the NETT as needed. Based on available resources, DTT will include minimum use of available manpower and maximum use of embedded or appended training, multi-media training, full motion driver simulation program, simulators, Part Task Trainer (PTT), and distance learning (dL). The TRADOC Deputy Chief of Staff of Operations and Training (DCSOPS&T) will resource MSCoE and USAES with instructors to conduct DTT. MMPV vehicles fielded to a Combat Training Center (CTC) must have One Tactical Engagement Simulation System capability in order to participate in force on force exercises at the CTC.

Recommendation: Recommend that the MATDEV continue to finance the deployment of NETT as needed. Based on available resources, DTT will include minimum use of available manpower, maximum use of embedded and multi-media training and dL.
5.0 System Training Concept

All training developed will follow the Analyze, Design, Develop, Implement and Evaluate (ADDIE) approach to Training process IAW TRADOC Regulation 350-70. MSCoE requires the PM, or contracted entity, to deliver all training materials, student guide, digitized TSP, technical manuals (TM), lesson plans, and instructor materials for the operator and maintainer in the Training Development Capabilities (TDC) format. MSCoE Systems Training, Integration, and Devices (STID) Team will provide the PM, or contracted entity, a copy of the TDC program. STID will review for acceptability and gain MSCoE approval for all training, training products, and technical manuals prior to fielding. The HMDS capabilities common critical task training will produce Soldiers who can operate and maintain the HMDS capabilities; leaders who can effectively plan for and employ each of the HMDS capabilities during combat operations; and units that can execute and sustain all HMDS capabilities operations and training. The HMDS capabilities will not generate a new MOS or ASI (currently being reassessed for ASI implications). There will be no increase in aptitude requirements to operate, maintain or support the HMDS capabilities. Operators for all HMDS capabilities will be MOS 12B (Combat Engineer). FM will be updated as technical data is collected for the systems.

Individual, Unit, and Crew Training. Operator, maintainer, and unit leader training is required for each HMDS capability.

(a) Individual training. New Equipment Training (NET) is a two phase event.

1. Operator NET will provide operator and maintainer training through classroom instruction covering characteristics, operations, and operator maintenance. This will be accomplished using Interactive Multimedia Instruction (IMI), Computer Based Training (CBT), classroom instruction, simulation, and hands-on training. Upgrades to the current Route Clearance Virtual Simulation Suite will need to incorporate HMDS capabilities functionality prior to conduct of NET.

2. Doctrine and Tactics Training (DTT) will instruct the employment of each HMDS capability and hands-on training in different environments. This will be accomplished through the use of IMI, CBT, classroom instruction, simulation, and hands-on training.

(b) Unit and leader training will cover characteristics and capabilities; planning and employment considerations; maintenance and sustainment; and an overview of TTP for each of the HMDS capabilities.
Those selected as unit instructors for the HMDS capabilities will receive, in addition to all the training above, training on planning and execution of individual and collective sustainment training and the operation and maintenance of the TADSS for the HMDS capabilities. The HMDS capabilities will be integrated into unit collective training at team through platoon level.

(c) After NET, it is the unit commander's responsibility to conduct individual operator and maintainer sustainment and proficiency training. Reserve and National Guard Components will be conducted in the same manner as the Active Component.

(d) Institutional training will be limited to a PowerPoint overview, IMI or other training package of the HMDS capabilities. Institutional courses affected are, but not limited to, the 12B Noncommissioned Officer Education System, Engineer Officer Education System, and Ordnance Warrant Officer Courses, as applicable.

(e) Operational unit training will be used for sustaining individual and collective proficiency in performing the tasks of each HMDS capability, as well as the training of new operators. Command selected NCO's trained on each HMDS capability will serve as unit trainers and advisors to commanders on employment, sustainment, and training of each HMDS capability; and will be trained during NET. Unit training will be based on the Training Support Packages (TSP) and TADSS fielded during Unit Set Fielding (USF) to assist in sustainment training. These enablers will be a combination of IMI, CBT, classroom instruction, simulation, and hands-on training utilized during NET and provided as part of a leave behind sustainment training package.

(f) The PM in conjunction with the MSCoE Combat Developer and Training Developer will develop IMI modules that support individual training in the institutional, operational, and self-development domains. The three training modules - operation and maintenance, employment, and unit training - will be included in the TSP fielded in NET. The modules will provide standalone CBT as well as web-based training.
5.1 New Equipment Training Concept (NET)

The PM has responsibility for programming, budgeting and funding of travel and per diem for NETT and DTT personnel to attend Instructor and Key Personnel Training (I&KPT) and other resources to support NET. NET consists of Operator NET and DTT. The HMDS capabilities will be separately fielded to units under the USF concept at home station. Units will be fielded all applicable TADSS, CBT, IMI, and TSP during USF. NET focuses on three functions: operations and maintenance, employment of the HMDS capabilities, and conducting unit sustainment training. NET will be consolidated at Company level (or higher where the fielding plan and unit schedules dictate). The NET Team will be composed of contractors and will use a train the trainer approach. NET will leverage CBT - IMI - and Soldiers will train on the newly fielded systems and TADSS. NET will provide initial proficiency for individual operator and maintenance skills, as well as leader employment skills. Distance Learning (DL) based instruction for operators, maintainers, and leaders will supplement training. Unit or operational training will be used for sustaining individual and organizational proficiencies after NET, relying on unit-trained NCOs, the training support package(s) delivered during NET, and DL-based IMI from the institution. IMI modules that support individual training in the institutional, operational, and self-development domains. The three training modules - operation and maintenance, employment, and unit training - will be included in the TSP fielded in NET. The modules will provide standalone CBT as well as web-based training.

The HMDS training program will be implemented and accomplished in three phases: NET, Institutional and Sustainment training.

- The NETT will provide a complete package of digitized training materials that includes TMs, lesson plans, instructor and student guides to each unit receiving HMDS. NET training (operator, unit and sustainment support) will be coordinated by TACOM NET and with MSCoE identifying MOS's requiring training.
- The NETT will provide instructors, training aids, and digitized technical publications to teach the Train-the-Trainer concept to selected unit personnel on unit and sustainment maintenance classes that shall be conducted on the HMDS.
- Once NET is completed, unit sustainment becomes a command responsibility. The unit will conduct all sustainment training with the stay behind digitized training support package (TMs, lesson plans, instructor and student guides, training aids) provided by the NETT.
- RC may be equipped with the HMDS (pending further determination of
organization and distribution). The training concept for these components will be the same as AA however; RC unit training time is limited due to Inactive Duty Training, Unit Training Assemblies, and Annual Training cycles.

- The PM will fund the NET, DTT and IMI program combined it will serve as a "leave-behind" training package for sustainment training.

DTT will be developed by MSCoE TNGDEV and presented concurrently with NET. Training media will be in a digital format with the final approved version being level three interactive IMI capable of being archived in the Army Doctrine and Training Library (ADTDL).
5.2 Displaced Equipment Training (DET)

DET will be provided to AA and RC as determined by the TNGDEV in coordination with the gaining unit command and the PM for the system. Should the requirement for DET arise, it is the responsibility of the MATDEV/PM to establish training and provide the necessary training.

There is no equipment to be displaced at this time.
5.3 Doctrine and Tactics Training (DTT)

DTT will instruct the employment of each HMDS capability and hands-on training in different environments. This will be accomplished through the use of IMI, CBT, classroom instruction, simulation, and hands-on training. DTT includes the concept of operations, capabilities, and limitations of the HMDS. This training provides the unit leadership with detailed knowledge of the system, allowing them to effectively integrate new capabilities into the unit.

No new doctrine will be developed for the HMDS. Current established TTPs will be adjusted to incorporate the HMDS capabilities. TTPs will be an evolving process through the change in the operational areas that the HMDS will be employed. DTT will be developed by MSCoE/STID & USAES. The TRADOC Deputy Chief of Staff of Operations and Training (DCSOPS&T) will resource MSCoE/STID & USAES with instructors to conduct DTT.
5.4 Training Test Support Package (TTSP)

The HMDS capabilities will be mounted on route clearance vehicles and be employed with the existing route clearance concept, doctrine, and TTP. Modifications will be made to the TTP to describe the actions required to employ the HMDS capabilities. A NET program is first prepared by the PM and MATDEV in accordance with AR 350-1, Army Training and Leader Development, 18 Dec 2009, to support training development for new materiel and information systems, including conduct of test and evaluation of new equipment and software. The PM in conjunction with the MSCoE CBTDEV and TNGDEV will develop an initial TTSP and provide to the test manager at least 12 months before OT. The TTP will be updated by the CBTDEV and TNGDEV as part of the Doctrine and Organization Test Support Package to support Operational Testing (OT), and be modified as needed during and after OT. The PM will deliver the final TTSP not later than 90 days before testing begins. The initial TTSP will also support Instructor and Key Personnel Training as well as user training for OT. The TNGDEV will complete the final TTSP containing: Training Schedule, POI for each MOS, TADSS, embedded training components, Target Audience Description (TAD), Soldier training publication (STP) or changes, lesson plans required for training, critical task lists, targets and ranges required for training. The TTSP will meet content requirements established in TRADOC Regulation 370-50, Paragraph II-6-4.

The Initial TTSP contains the System Training Plan (STRAP), Training Certification Plan and Training Data Requirements (TDR).

NET TSP. The PM in conjunction with the MSCoE CBTDEV and TNGDEV will develop a TSP to support NET. It will be based on the TTSP, modified by lessons learned during OT. The area detection concept to detect, mark, and report deep buried off-route caches may require refinement, uses area clearance doctrine as its basis, and will require the development of a TTP. The TTP will be developed by the CBTDEV and TNGDEV as part of the Doctrine and Organization Test Support Package. The TSP will meet content requirements established in TRADOC Regulation 370-50.
6.0 Institutional Training Domain

USAES will conduct institutional training for the Operators MOS 12B (Combat Engineer) and Maintainers MOS 91L (Construction Equipment Repairer) and MOS 91A (Engineer Equipment Repair Technician). Fort Jackson, SC will conduct institutional training for MOS 91B (Wheeled Vehicle Mechanic). Fort Gordon, GA will conduct institutional training for MOS 94F (Computer Detection Systems Repairer). Training will make maximum use of TADSS to reduce training base resource requirements and will include all critical tasks. The institutional training will be validated during the First Unit Equiped (FUE) Field Level Maintenance New Equipment Training (FLMNET).

Institutional courses affected are, but not limited to, 12B Noncommissioned Officer Education System (NCOES), Engineer Officer Education System, and Ordnance Warrant Officer Courses, as applicable. The training approach for the HMDS is to develop an Integrated Training Concept that uses several complimentary instructional methods and media to present knowledge and skills of increasing complexity.

Institutional training courses for maintainers will be integrated into an existing maintenance course by sub-proponent schools as directed by CASCOM. Distributive Learning (DL) based instruction for operators and leaders may supplement some residential training. The MATDEV will provide the PME and resident courses with a complete TSP delivered during NET. A Training Circular (TC) will be produced under the guidance outlined in TRADOC Regulation 350-70, Systems Approach to Training Management, Processes, and Products, 9 Mar 1999.
6.1 Institutional Training Concept and Strategy

USAES will conduct institutional training for the Operators 12B (Combat Engineer). Institutional training courses affected are, but not limited to, the 12B Noncommissioned Officer Education System, Engineer Officer Education System, and Ordnance Warrant Officer Courses, as applicable will be familiarization of the HMDS capabilities. The training approach for the HMDS is to develop an Integrated Training Concept that uses several complimentary instructional methods and media to present knowledge and skills of increasing complexity.

This Integrated Training Concept is capable of supporting fielding, operations, and sustainment of the systems to fielded units, and meeting the training needs of the institutions. This strategy includes training requirements for operators and affected functional areas above the operator and maintainers. Personnel resources for the HMDS training must come from AA and RC resources. The TADSS must be provided in sufficient quantities and within the appropriate time frames to support operational testing and fielding. Curriculum is to be developed and implemented within one (1) year after the FUE per TRADOC Regulation 350-70. The employment of the HMDS requires an institutional training strategy to be developed. A comprehensive training analysis is required to determine the impacts on the 12B/91L/91B/94F/919A series MOSs.

Institutional training will consist of a functional course having a mix of conventional training methods, interactive multi-media as well as training on actual Route Clearance Family of Systems (RCFOS) for both operators and maintainers. Institutional training at the supervisory level will focus on familiarization on operation, capabilities, current TTPs, joint use, maintenance, and safety procedures. Institutional training for RC personnel will follow the same POI as the Total Army Training System (TATS) courseware and should address monthly and annual training cycles.
6.1.1 Product Lines

Technical Manuals (TM). Electronic TMs for Operators and Maintainers will be produced to MIL-STD-40051-2 (Military Standard Technical Manual Preparation) and undergo a validation and verification process to ensure accuracy and completeness (T); Interactive Electronic Technical Manuals will be produced to MIL-STD-40051-1 (O). The operator and maintenance TMs must follow the standard military design using a two-level maintenance system. Any Commercial Off-the-Shelf manuals for operators and maintainers will undergo a verification review prior to issue, and if used, will be in accordance with MIL-STD 40051 (Military Standard Technical Manual Preparation) [MIL-HDBK-1221 (NOTICE3), Department of Defense Handbook for Evaluation of Commercial Off-The-Shelf (COTS) manuals]. Operator, field, and sustainment levels of maintenance will be specified in the Maintenance Allocation Charts.

- Officer Education System (OES)
- Noncommissioned Officer Education System (NCOES)
- Soldier Training Publications (STP)
- Training Circulars (TC)
- TSPs for collective tasks
- TSPs for individual tasks
- Training Test Support Package (TTSP)
- Interactive Courseware
- Technical Manuals (TMs)
- Interactive Electronic Technical Manuals (IETM)
- Interactive Multimedia Instruction (IMI)
- Web-based instructions
6.1.1.1 Training Information Infrastructure

All Distributed Learning (dL) training products and courseware design will be developed in accordance with Total Army Distributed Learning Program standards and standardized design tools. Upon USAES approval, the complete HMDS TSP will be placed on the Army Doctrine and Training Digital Library (ADTDL) for units to use during sustainment training. Packages will be part of system unit fielding.
6.1.1.1.1 Hardware, Software, and Communications Systems

Materials developed in support of NET will be maintained with the MSCoE CDID/RDD-AM/STID personnel. These products will be used to aid the institutional TNGDEV in courseware development.
6.1.1.1.2 Storage, Retrieval, and Delivery

Training packages, TMs, and other forms of media are to be developed IAW TRADOC Reg 350-70 for access by authorized users. These products will be available through means such as Reimer Digital Library (RDL), Distributed Learning (DL) repositories, Center for Army Lessons Learned (CALL) repositories, and Video Tele-Conference (VTC). These products will be written IAW the ADDIE and put into the database.
6.1.1.1.3 Management Capabilities

TADSS will be managed in the Training Support-Material Armywide Tracking System (TS-MATS). All fielded system's TADDS will be accounted for and managed by supporting Training Support Centers (TSC). TADSS developed in support of the HMDS will be issued a device number IAW DA PAM 350-9 (Index and Descriptions of Army Training Devices, 12 May 2010). Materials produced by the NET manager and USAES, Directorate of Training and Leadership Development (DOTLD) will be required to be in the current training development format ADDIE or current approved Army training program. The Digital Training Management System (DTMS) will be the primary means used for the delivery of training products to the operational forces. Those products will be validated by the TNGDEV and provided on viable digital media.
6.1.1.1.4 Other Enabling Capabilities

No Other Enabling Capabilities identified.
6.1.1.2 Training Products

Institutional TSPs will be based off the critical task lists for the skill levels being instructed. The instructional methods/media for operators, (including operator maintenance) and functional areas above the operator are: classroom, conference/lecture/demonstration, and practical exercises with equipment. The institutional training plan will include the Computer Based Interactive Training (CBIT) software to maximize student understanding prior to any equipment practical exercise requirements and stored in the current Army approved training development automated system to allow for delivery to the operating forces through the Digital Training Management System (DTMS).
6.1.1.2.1 Courseware

The goal for the PM is to produce a New Equipment Training Support Package (NETSP) that is able to be web based. All courses described under paragraph 6.1.1.2.2. Shall be available in IMI as exportable media supporting Computer Based Training (CBT) or as web-based training hosted on the Army Learning Management System. The IMI package must be SCORM compliant and meet as dL requirements as outlined in TRADOC Reg. 350-70.
6.1.1.2.2 Courses

Employment and operational planning of the HMDS will be incorporated into 12B MOS, Noncommissioned Officer Education System (NCOES), 12A Officer Education System (OES), 91L, as well as 919A; these courses will receive classroom instruction on the limitations, capabilities, and employment techniques of the HMDS. HMDS training for the RC will be supportable within the 39 training days.
6.1.1.2.3 Training Publications

Publications will be available in digitized formats and be capable of archiving in the Army Knowledge On-line (AKO) website.

- DA Technical Manuals (DATM)
- COTS manual
- Soldiers Pocket Guide
- Training Circular (TC)
- IMI


6.1.1.2.4 Training Support Package (TSP)

The MATDEV shall provide a complete TSP for individual training utilizing data from operator and maintainer TMs. The TSP will include operator training guides from Initial Equipment Training (IET) through unit sustainment. MSCoE/USAES personnel will attend the MATDEVs I&KPT, Logistics Demonstration, Validation/Verification of the TM, and will validate training materials developed by the contractor. HMDS training shall be based on the Combined Arms Training Strategy (CATS) at the unit and individual level.

The TSP shall be produced in digital media, and will include training guides and lesson plans. The operator and maintenance TMs must follow the standard military design using a two-level maintenance system. The TM and TSP will be used for initial and unit sustainment training. COTS manuals, if used, will be in accordance with MIL-STD 40051 (Military Standard Technical Manual Preparation) [MIL-HDBK-1221 (NOTICE3), Department of Defense Handbook for Evaluation of Commercial Off-The-Shelf (COTS) manuals].
6.1.1.3 TADSS

Unit and Institutional TADSS. Operators will require quick reference cards or Graphic Training Aids for start-up/shut-down, and Preventive Maintenance Checks and Services procedures. The HMDS capabilities will be upgraded to complement and operate on the existing route clearance vehicles' TADSS suite as it would in the actual vehicle and/or situation. Simulations/simulators require replication of the form, fit, and function of components necessary to accomplish critical tasks to reduce negative training. It shall complement and operate with embedded training in the existing route clearance vehicles TADSS suite as it would in the actual vehicle and/or situation. HMDS capabilities will be provided with TADSS hardware and software systems. Current and future route clearance TADSS will support both the institutional and operational training domains.

The TNGDEV envisions a complete RCFoS in conjunction with Live and or Virtual Partial Task Trainers (PTT) to teach basic equipment and component operations: simulators to replicate functions, gauges, instruments and controls needed to operate the specific components of each HMDS within the RCFoS. The HMDS training device strategy will provide the capability to train and sustain individual and collective critical tasks. Training will be conducted by the use of IMI and other training TADSS. Accordingly, all HMDS platforms/modules will optimize these training devices for unit sustainment and force level training. It is envisioned that the following areas will be trained.

- Operator Training
- Maintenance Training
- Individual/Unit Performance Data Storage/Retrieval
- Battlefield Damage and Repair Training
- Leader Training
- Operator level trouble shooting on the system
6.1.1.3.1 Training Aids

GTAs, IED Effects Simulator (IEDES), The Cause and Effects System (CES), Route Clearance Sand Table Kit and Explosive Hazard Rubberized Target Set (EHRTS) will be used to support institutional and sustainment training.

GTAs will include the publication of operator and maintainer smart books for the MMPV variants and subsystems. This will help Soldiers with startup/shutdown, and PMCS procedures.

Route Clearance Sand Table Kit will be used as a visual representation during training and planning route clearance operations.

IED Effects Simulator (IEDES), Explosive Hazard Rubberized Target Set (EHRTS) and Cause and Effects System (CES), and will replicate realistic battlefield effects and scenarios.
6.1.1.3.2 Training Devices

The HMDS training device strategy will provide the capability to train and sustain individual and collective critical tasks in the institution. Accordingly, all HMDS platforms/modules will optimize these training devices for unit sustainment and force level training. It is envisioned that the following capabilities will be trained.

(1) Driver/Operator Training.

(2) Maintenance Training.

(3) Maneuver Training.

(4) Command and Control.

(5) Individual/Crew/Unit Performance Data Storage/Retrieval.

(6) Battlefield Damage and Repair Training.

(7) Command, Control, Communications, Computer, Intelligent, Surveillance and Reconnaissance (C4ISR) Integrated Systems Training.
6.1.1.3.3 Simulators

The overall intent of simulators is to provide enough operators training to the Soldier to reduce the amount of time required on the gaining unit to license their operators (issue DD Form 348 at unit). HMDS will require a simulated training platform to train Soldiers during the operating phase of the HMDS training. The simulator will provide various environmental conditions such as ice, mud, rain, snow, day and night. The simulator will also provide operation in different types of terrain such as sand, tank trails, trees, dense vegetation, hills and hard surfaces. The simulator will be cost effective since it reduces the OPTEMPO hours of the actual HMDS and other like systems. It will also reduce maintenance costs of the system. It allows training to be conducted when environmental conditions will not allow for safe operation/training of the system on training areas that have undisturbed soil. USAES will use the simulator to help train Soldiers to get a better understanding of operation of the system before actually operating the live system. Once familiar with the system on the simulator it will enable them to operate the live system more smoothly. The simulator will replicate actual road surfaces with emplaced mines or IEDs, deep buried on or off-route caches for the operator to detect, mark, and report. All operations conducted in the simulator are in a replicated environment with reduced safety implications. This allows Soldiers to operate more proficiently on actual systems within the limited training timeline. If Soldiers have difficulty while performing tasks on the live system, they can return to the simulator and conduct retraining missions to correct operational deficiencies.

Basis of Issue (BOI): MSCoE intends to have additional simulations inserted into the Virtual Clearance Training Suite Simulator (VCTS) system to cover operation of all the HMDS capabilities during Vehicle Mounted Mine Detection (VMMD) training. Costs for this system insertion will need to be obtained by the PM. PEO-STRI, MSCoE TNGDEV and TCM-V. This will then be included in the VCTS contract as an Engineer Change Proposal (ECP) once funded, by MSCoE, TCM-V & PEO STRI, PM CATT.

VCTS' primary function is to train Route Clearance missions; its secondary function is to support other Engineer Unit training plans. VCTS is a mobile TADSS but will home-base on a Military installation and can be moved to alternate locations to support training.
6.1.1.3.4 Simulations

Simulations which allow leaders to train, plan, prepare, and conduct missions using the HMDS are required to ensure knowledge transfer. These simulations are preferred to be embedded into the following:

- Joint Conflict And Tactical Simulation (JCATS)
- Brigade Battalion Battle Simulation (BBBS)
- Corps Battle Simulation (CBS)
- Virtual Battle Space 2 (VBS2)
- Virtual Clearance Training Suite (VCTS)
- Joint Land Component Constructive Training Capability (JLCCT)
6.1.1.3.5 Instrumentation

The HMDS capabilities will be integrated into Combat Training Center (CTC) instrumentation. Live Force-on-Force (FOF) training at home station, local training areas, maneuver CTC, and deployed training sites will be required to validate the ability of units to employ HMDS capabilities within the force and for mission rehearsal needs.
6.1.1.4 Training Facilities and Land

HMDS capabilities will not require new or modified facilities or training areas; this will continue to be monitored throughout the acquisition program.
6.1.1.4.1 Ranges

A multipurpose range which allows for use of the Route Clearance systems and complies with environmental constraints and allows for freedom of movement and proper standoff distances as outlined in the respective TM's will be required for institutional training.
6.1.1.4.2 Maneuver Training Areas (MTA)

Training Area shall be required to provide sufficient room and storage area to accommodate and accomplish all critical tasks for equipment operation and maintenance. Land for Institutional training must have sufficient resources to allow the operators to conduct Clearing operations and maneuver area using the HMDS.
Traditional classrooms will be required for group instruction, and Classroom XXI access will be used for student-centered multimedia environment access to HMDS training materials.
6.1.1.4.4 CTCs

The CTCs must possess the capabilities to replicate environmental conditions under which units may employ HMDS. After rotations, After Action Reviews will be forwarded to the institutions with recommendations for training improvements.
6.1.1.4.5 Logistics Support Areas

The institution is responsible for storing, processing, supporting, and staging training products and systems, both classified and unclassified. The support concept will be compatible with standard Army Logistics and Two-Level Maintenance systems and, when appropriate, consistent with commercial industry support concepts and practices. Contractor Logistics Support (CLS) will initially provide logistics and maintenance support while support transitions to the standard Army Logistics and Maintenance Systems. Contractor support should not be lower than Sustainment Level. The HMDS shall be supportable and sustainable at the Field Level. The HMDS shall use common components to the maximum extent possible to facilitate worldwide supportability. The MATDEV will provide the life cycle management and develop the supportability strategy by coordinating with the CBTDEV at MSCoE and CASCOM. The MATDEV in coordination with the MSCoE and CASCOM CBTDEV will identify the ILS management and technical effort to identify and acquire the elements of support for operations and sustainment.
6.1.1.4.6 Battle Command Training Centers (BCTC)

Capabilities and employment doctrine will need to be updated at the Battle Command Training Program (BCTP) to incorporate the HMDS.
6.1.1.5 Training Services

The PM in conjunction with MSCoE, CDID/STID and CASCOM will be developed
IMI modules which support individual training in the institution,
operational and self-development domains. The three training modules
(operational, maintenance and employment) are included in the TSP fielded
during NET. These modules can be used in either the stand-alone mode or
web-based training over the internet or reach-back. The IMIs must follow
the requirements defined for the HMDS for consistency in look and feel and
capable of operating on Clearance Training Services Simulation platforms
using embedded training. Courseware complies with the SCORM.
6.1.1.5.1 Management Support Services

The PM in conjunction with USAES, MSCoE, CDID/STID and CASCOM will be developed IMI modules which support individual training in the institution, operational and self-development domains. The three training modules (operational, maintenance and employment) are included in the TSP fielded during NET. These modules can be used in either the stand-alone mode or web-based training over the internet or reach-back. The IMIs must follow the requirements defined for the HMDS for consistency in look and feel and capable of operating on Clearance Training Services Simulation platforms using embedded training. Courseware complies with the SCORM V2.
6.1.1.5.2 Acquisition Support Services

All TADSS development and training support services will be handled and managed through MSCoE and Requirements Determination Division-Assured Mobility (RDD-AM) STID, Program Executive Officer- Systems Training Integration (PEO-STRI) and existing contracting mechanism and business practices.
6.1.1.5.3 General Support Services

Typical general support services (such as distribution and replication) will be required to support training in the Institutional domain; any requirement for additional support services such as video production services and TADSS development, procurement, distribution is yet to be determined.
6.1.2 Architectures and Standards Component

The system does not have a Command, Control, Communication, Computers, Intelligence and Interface (C4I) with any other system or capability. The Capabilities Production Document (CPD) defines the System as not NET Ready. Communications security requirements shall not exceed that of host vehicles and/or standard vehicular voice radios.
6.1.2.1 Operational View (OV)

The HMDS is designed to counter the effects of explosive hazards, such as mines, improvised explosive devices, unexploded ordnance, that could impede the mobility of friendly forces, destroy systems or cause personnel casualties. The HMDS is utilized to assure Mobility to the War-fighter by providing detection of mines, IED's and explosive hazards to assist in clearing routes for military operations.
HUSKY MOUNTED DETECTION SYSTEMS
Capability Production Document

OV-1 High-level Operational Concept

Mission Description

Conduct high-level surveillance to identify and prioritize areas of interest for detailed analysis. Utilize unmanned aerial vehicles (UAVs) and ground-based sensors to gather real-time situational awareness in hostile environments. Prioritize and focus on areas of interest to support higher level decision-making and mission execution.

OV-1 High-Level Operational View
HUSKY MOUNTED DETECTION SYSTEMS
Capability Production Document

Route Clearance Concept Sketch

The Squad, operating as detection and neutralization element, can clear a one-two-way (10 m) vehicle traffic route at an average rate of 15 kph with vehicles at 30 – 50 m intervals during a mission.

![Route Clearance Concept Sketch Diagram]

<table>
<thead>
<tr>
<th></th>
<th>HUSKY</th>
<th>MPCV</th>
<th>HUSKY</th>
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<td>Semi-Autonomous Control</td>
<td>Semi-Autonomous Control</td>
<td>MBU installed; if needed can be activated for Semi-Autonomous Control</td>
<td>Semi-Autonomous Control capable, if needed, via modular payload OCU to control HUSKY</td>
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<td>workstation in MPCV</td>
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<td></td>
<td>Target Marking</td>
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OV1 Route Clearance Concept Sketch
HUSKY MOUNTED DETECTION SYSTEMS
Capability Production Document

Area Detection Concept Sketch
The Team conducts area detection operation to locate and mark deep
route caches at an average rate of 10 kph (up to 25,000 square
ur/Husky while sustaining one meter overlap) during a mission.

Mode

Unmanned Mode

Semi-Autonomous Control

MPCV

(Tm Leader)

The process of area is completed, perimeter marked, and area secured.

KEY

HUSKY

• Semi-Autonomous Control via MBU; operate within 200 meters of MPCV with OCU
• Deep Buried Detection
• Target Marking

MPCV

• Semi-Autonomous Control of Husky by operator at OCU workstation in MPCV

MMPV

• Command and Control
6.1.2.2 Systems View (SV)

The optional OV-2 graphically describes the operational nodes (MBU and OCU) and the information exchange requirements to semi-autonomously operate the Husky in a closed loop system with point-to-point transmissions.
HUSKY MOUNTED DETECTION SYSTEMS
Capability Production Document

OV-2 Operational Node Connectivity Description
Husky Semi-Autonomous Control Capability

MBU in HUSKY

(i) 5, 7, 8

OCU in MPCV or MMPV

Unclassified Sensitive Information

ACRONYMS

IER: Information Exchange Requirements
MBU: Mobile Base Unit
MMPV: Medium Mine Protected Vehicle
MPCV: Mine Protected Clearance Vehicle
OCU: Operator Control Unit

IER LIST
1. Engine, system
2. Speed and transmissions
3. Platform status
4. Emergency
5. Automotive maintenance
sensor info
6. Video camera
7. Video output
8. Detection system
9. Target marking
10. Raise/lower detection point
6.1.2.3 Technical View (TV)

N/A
6.1.3 Management, Evaluation, and Resource (MER) Processes Component

USAES must accomplish necessary documentation and resourcing actions to ensure that equipment utilized by the Engineers for clearance operations is also made available for the institutional training site.

The Quality Assurance Office (QAO) will conduct periodic surveys to obtain feedback on the effectiveness of the HMDS training material at the institution and how it impacts the unit level missions. This information will be used to analyze and update training and doctrine at the institution.
6.1.3.1 Management

The USAES Directorate of Training and Leader Development (DOTLD), and Director of Training (DOT) and CASCOM will manage the HMDS effort as the TNGDEV. TNGDEV within each of these organizations is charged with ensuring all aspects of training are identified and implemented. Both organizations will participate in strategy development with regards to tactical operations and training. Both organizations will monitor, comment on, and attend concept development and experimentation meetings dealing with the HMDS.
6.1.3.1.1 Strategic Planning

The MSCoE, CDID, in coordination with the USAES DOTLD will manage the HMDS as the Combat Developer (CBTDEV) and TNGDEV. TNGDEV in the CDID/RDD will ensure that all aspects of training are identified and implemented. Both organizations will participate in strategy development with regards to tactical operations and training. Both organizations will monitor, comment on, and attend concept development and experimentation meetings dealing with the HMDS.
6.1.3.1.2 Concept Development and Experimentation (CD&E)

No concept analysis conducted.
6.1.3.1.3 Research and Studies

No concept analysis conducted.
6.1.3.1.4 Policy and Guidance

Documents pertaining to policy and guidance are listed in Appendix B, References.
6.1.3.1.5 Requirements Generation

Documents pertaining to Requirements Generation are listed in Appendix B, References.
6.1.3.1.6 Synchronization

Development and production of TADSS must be synchronized with end item acquisition in order to meet the goals of the Unit Set Fielding (USF).
6.1.3.1.7 Joint Training Support

The possibility of Joint use of the HMDS and consequent training requirement by other branches of service - primarily the USMC - can be initially supported at the USAES FLW facilities and at all CTCs. Future integration into the USMC could be supported if funding is made available.
6.1.3.2 Evaluation

The MSCoE, USAES DOTLD will ensure the quality of training provided by the institutional NCOES and OES, through external evaluations, will focus on the use of task trained, proper application of tasks, and identification of tasks not trained, but needed. Internal evaluations will focus on the presentation of the tasks at the institution, course content, and the instructor presentation of the material. Post Fielding Training Effectiveness Analysis (PFTEA) will ensure that training on the HMDS capabilities trains Soldiers, leaders, and units to standard. The PM will fund a USAES-conducted PFTEA approximately one year following First Unit Equipped (FUE).
6.1.3.2.1 Quality Assurance (QA)

The Quality Assurance Office (QAO), USAES will use proven techniques to determine the quality of training provided by the institution. External evaluations will focus on the use of tasks trained, the proper application of those tasks, and identification of tasks not trained but needed. Internal evaluations will focus on the presentation of the tasks at the institution, the course content, and the instructor presentation of material.
6.1.3.2.2 Assessments

A PFTEA ensures HMDS training capabilities trains Soldiers, leaders, and units to standard. PFTEA ensures that training on the HMDS capabilities trains Soldiers, leaders, and units to standard. The PM will fund a USAES-conducted PFTEA approximately one year following First Unit Equipped (FUE). The timeline will depend on unit availability and operational tempo.
6.1.3.2.3 Customer Feedback

Soldiers and leaders will assess HMDS training products, processes, and services every time they are used to conduct institutional training. Their assessments will address the usefulness of the systems training products in providing a relevant training environment.
6.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)

The USAES DOTLD Lessons Learned/Analysis element will collect and consolidate input from external organizations, such as Combined Arms Center Lessons Learned, Battle Command Knowledge Network, and collaboration groups. This data will be assessed and, if warranted, distributed to the USAES TNGDEV for consideration of incorporation in new or existing courses.
6.1.3.3 Resource

Institutional resources must be capable of exercising all HMDS capabilities. These capabilities are: (1) Mine Detection by use of GPR; (2) Sufficient range space to provide a minimum safe distance as per guidance in appropriate TM.

- Additional Operations and Maintenance-Army Funding Requirements will be included after the contract has been awarded.
- Operational costs for DTT/TNGDEV over the life of the system are shown in table 6-1 below. These costs are estimates and depend on the system maturity to develop.
- Development and procurement for TADSS will be included after contract is awarded.
- Operator New Equipment Training/Field Level Maintenance New Equipment Training (OPNET/FLMNET) estimates will be included after the contract is awarded.
- New Material In Brief (NMIB) and System De-processing will be included after the contract is awarded.

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<th>FY13</th>
<th>FY14</th>
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For Official Use Only
### Rationale

TNGDEVs are needed to develop JCIDS documents, programs of instruction and other outputs of the TDC process. Military Subject Matter Experts (SME) will be used in different areas within the training program, primarily for Doctrine Tactics Techniques, training (DTT). Travel/Per Diem represent’s cost to attend various training requirements and training events based on the number of individuals and key personnel to evaluate the training prior to operational testing traveling at various training locations.

### Table

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### New Equipment Training/DTT

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**Rationale:** Contract support, Vendor Equipment and POL Products in support of NETT and DTT. To sustain a quality training environment a portable or standard classroom is needed.
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Rationale: Cost to develop, revise, maintain, and distribute Training Products i.e.; TSP, NET/DDT, institutional, operational, and self-development domains.
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Rationale: Cost to procure and sustain.

Rationale: Personnel required providing quality control and training evaluations at least quarterly.
7.0 Operational Training Domain

The objective of operational training on the HMDS is to maintain combat readiness through the reinforcement of HMDS related individual skills and integration of HMDS capabilities into the clearance company to support combined arms maneuver operations.
7.1 Operational Training Concept and Strategy

The NET support materials (leave-behind package) will provide a basis for the development of unit-level training. Unit sustainment training will be accomplished using the leave-behind package and all applicable TMs. The unit will train Soldiers in unit deployment of the HMDS. Leaders at all levels: crew, platoon, company, battalion, and brigade are responsible for attaining and maintaining unit proficiency. Training events and frequency of training required for proficiency will be determined by the USAES DOTLD. Collective training will be conducted and evaluated against the Training & Evaluation Outline (TE&O) found in the CATS and be developed, maintained and stored in the Digital Training Management System (DTMS).

Unit members will receive the training necessary to attain proficiency in all critical tasks required to accomplish the unit mission. This will include operation, maintenance, and supervisor tasks. Unit commanders are responsible for providing the training guidance, time, and resources for individuals to maintain the level of proficiency required by the appropriate STP.

The unit will conduct sustainment training at the squad, platoon, and company level. Clearance sections that utilize the system shall train on collective tasks by integrating them into collective training events. Exportable training packages, videotape lessons, and individual programmed texts for skill maintenance will be embedded in the host units. In addition, TNGDEVs and unit commanders must ensure that the sustainment training requirements are integrated into affected unit CATS.

**RC Training:** RC training will follow the same training concept and POI as the AC units. RC fielding and training will occur during monthly drills and AT cycles.
7.1.1 Product Lines

The MATDEV will provide units with a complete TSP, dL based IMI during NET.
7.1.1.1 Training Information Infrastructure

Under the four areas below the Training Information Infrastructure (TII) requires further analysis; however, preliminary analysis for these areas and findings are described in the respective paragraphs.
7.1.1.1.1 Hardware, Software, and Communications Systems

Multimedia disks developed in support of NET training will be maintained at the MSCoE Systems Integration Team. Institutional course managers will also provide disks which units can obtain for sustainment training development.
7.1.1.1.2 Storage, Retrieval, and Delivery

Training packages, collective and individual tasks, TMs, and other forms of media are to be developed IAW TRADOC Reg 350-70 for access by authorized users. These products will be available through means such as Reimer Digital Library (RDL), dL repositories, Center for Army Lesson Learned (CALL) repositories, and Digital Training Management System (DTMS).
7.1.1.1.3 Management Capabilities

TADSS will be managed in the MATS. TADSS developed in support of the MMPV variants and subsystems will be issued a device number IAW DA PAM 350-9. Materials produced for instruction i.e. (collective tasks, individual tasks, drills, TSPs etc) will be maintained by DOTLD in the ASAT or the replacement TDC when implemented and delivered to the operating forces through the DTMS.
7.1.1.1.4 Other Enabling Capabilities

TADSS for the sub-systems will be available for specific systems only. The VCTS will assist in training the HMDS. Future TADSS maybe come available for subsystems.
7.1.1.2 Training Products

The Army Distributed Learning Program (TADLP) is a HQDA-funded Chief of Staff, Army (CSA)-approved program. It provides near-term and long-range planning and funding for infrastructure and hardware for the Program Manager (PM) funded Distributed Learning System (DLS). It fully supports individual training (including leadership and self-development), Army Modernization Training (AMT), and unit training. MSCoE intends to also host the IMI Products on the MSCoE server.
7.1.1.2.1 Courseware

The MATDEV NET Trainer will conduct the following courses: Operator NET and Leader/Staff planning and employment. TSPs intended for unit use in sustainment training will be available through the RDL. Collective and individual training and doctrinal information that is delivered to units will be available to individual Soldiers through the RDL and the ATDL. The TDC database is a working repository of training material, developed by the institution, which includes above information as well as CATS, POIs, TSPs, lesson plans, etc.
7.1.1.2.2 Courses

Appropriate courses, both officer and enlisted, will be modified or developed to include the HMDS characteristics, doctrine and tactics, capabilities, operation, survivability, maintenance and communications. This training will support the HMDS and will be based on input from contractor produced Logistics Support Analysis (LSA) data, contractor training, results from the HMDS operational testing and Subject Matter Experts (SME).

TSPs intended for unit use in sustainment training will be available through the RDL. Collective, individual training and doctrinal information that is delivered to units will be available to individual Soldiers through the RDL and the Army Training Digital Library (ATDL). The ASAT database, or the replacement Training Development Capability (TDC) when implemented, is a working repository of training material, developed by MATDEV and TNGDEV, which includes above information as well as CATS, POIs, TSPs, lesson plans, etc.
7.1.1.2.3 Training Publications

STP 5-12B14-SM-TG, Soldier's Manual and Trainers Guide, MOS 12B, Combat Engineer, Skill Levels 1/2/3/4, will require revision to incorporate the capabilities of the new HMDS. Unit CATS must be updated to incorporate individual and collective tasks to support the HMDS.
7.1.1.2.4 TSP

Sustainment training in units will be managed and executed by command selected NET-trained NCOs. During NET training, lesson plans and student guides will be provided in a format that will provide all information required to proliferate initial and sustainment training. Multimedia TSP(s) will be developed by the MD and validated by the MSCoE/RDD-AM/STID & USAES, which shall be designed to support unit sustainment training as well as NET and institutional training. NCO trainers will leverage digital TSPs for both individual and collective training.
7.1.1.3 TADSS

TADSS such as training aids, job aids, and multimedia software will be developed to support operational training, and provided to the unit as a leave behind package at NET training. The leave behind TADSS packages will be accompanied with their appropriate instruction manuals.
7.1.1.3.1 Training Aids

Reference to Paragraph 6.1.1.3.1
7.1.1.3.2 Training Devices

NET support materials (leave-behind package) will provide a basis for the development of unit-level collective training. The unit will train Soldiers in unit employment. Leaders at all levels, crew, platoon, company, battalion, and brigade are responsible for attaining and maintaining unit proficiency. Collective training will be conducted and evaluated against the TE&O found in the Unit CATS. The IEDES system will be used with HMDS training. Ref to Par 6.1.1.3.2
7.1.1.3.3 Simulators

Refer to para 6.1.1.3.3
7.1.1.3.4 Simulations

Refer to para 6.1.1.3.4
7.1.1.3.5 Instrumentation

The NET leave behind package resource used as a guideline for sustainment training will be available, this will consist of TSPs, CBIT, and any additional training designed for NET. This package will address deploy, retrieval, operation, and maintenance procedures for the HMDS IAW unit level requirements and the critical tasks list.
7.1.1.4 Training Facilities and Land

The HMDS may require additional training facilities in the operational domain. All gaining units may require additional facilities to maintain the HMDS, and its associated equipment. At this time training facilities and land are sufficient to support the HMDS.
7.1.1.4.1 Ranges

Installations must have sufficient Range recourses to operate and train the MMPV variants and subsystems. This includes sufficient Facilities to provide complex rural and urban terrain including confined areas and subterranean environments (e.g. designated routes, buildings, bunkers, tunnels, sewers, caves, culverts, ditches, behind guard rails, around bridge abutments, etc). Current ranges are sufficient to support the MMPV in the operational domain.
7.1.1.4.2 Maneuver Training Areas (MTA)

MTAs are those areas designated for impact and detonation of all ordnance or those areas required for land-intensive training at the installation.
Currently no new classrooms are required for operational training.
7.1.1.4.4 CTCs

Capabilities and employment doctrine will need to be updated at the Battle Command Training Program. Information will be updated if/when changes are required.
7.1.1.4.5 Logistics Support Areas

The Unit will be responsible for storing, processing, supporting and staging training products and systems, both classified and unclassified.
7.1.1.4.6 Battle Command Training Centers (BCTC)

Refer to para 6.1.1.4.6
7.1.1.5 Training Services

Unit members will perform all unit sustainment training. Unit members will receive the training necessary to attain proficiency in all critical tasks required to accomplish the unit mission. This will include operation, maintenance, and supervisor tasks. Unit commanders are responsible for providing the training guidance, time, and resources for individuals to maintain the level of proficiency required by the appropriate STP.
7.1.1.5.1 Management Support Services

The support concept will be compatible with standard Army Logistics and Two-Level Maintenance systems and, when appropriate, consistent with commercial industry support concepts and practices. Contractor Logistics Support (CLS) will initially provide logistics and maintenance support while support transitions to the standard Army Logistics and Maintenance Systems. Contractor support should not be lower than Sustainment Level. HMDS shall be supportable and sustainable at the Field Level. HMDS shall use common components to the maximum extent possible to facilitate worldwide supportability. The Materiel Developer will provide the life cycle management and develop the supportability strategy by coordinating with the Combat Developers CBTDEV at MSCoE and CASCOM. The strategy must ensure that HMDS payload modules remain safe, effective and supportable throughout their life cycle. The strategy must match the unique operational and support environments for the payload modules. The MATDEV in coordination with the MSCoE and CASCOM CBTDEV will identify the Integrated Logistics Support (ILS) management and technical effort to identify and acquire the elements of support for operations and sustainment.
7.1.1.5.2 Acquisition Support Services

No acquisition support services are anticipated for conduct of operational training.
7.1.1.5.3 General Support Services

Typical general support services (such as distribution and replication) will be required to support training in the Operational domain; any requirement for additional support services such as video production services and TADSS development, procurement, distribution is yet to be determined.
7.1.2 Architectures and Standards Component

Refer to para 6.1.2
7.1.2.1 Operational View (OV)
Husky Mounted Detection System (HMDS) Operational Training

SV 7.1.2.1
7.1.2.2 Systems View (SV)
Husky Mounted Detection System (HMDS) Operational Training
7.1.2.3 Technical View (TV)

Not Applicable
7.1.3 Management, Evaluation, and Resource (MER) Processes Component

The QAO will conduct periodic surveys to obtain feedback on the effectiveness of the HMDS NET leave behind package training material at the units and how it impacts the unit level training/missions. This information will be used to analyze and update training, critical tasks and doctrine.
7.1.3.1 Management

Refer to para 6.1.3.1. Further refinement of STRAP will reflect in the training document which supports the CPD for this system.
7.1.3.1.1 Strategic Planning

The MSCoE/RDD-AM/STID&USAES, in coordination with the USAES DOTLD will manage the HMDS as CBTDEV and TNGDEV. TNGDEV in the MSCoE/RDD-AM/STID&USAES will ensure that all aspects of training are identified and implemented.

Soldiers assigned to units that are being fielded with the HMDS will receive their initial HMDS training from the NET team during the fielding effort. HMDS equipped units will utilize a leave-behind package provided by the NET team to conduct sustainment training. Both organizations should participate in strategy development with regards to tactical operations and training.
7.1.3.1.2 Concept Development and Experimentation (CD&E)

No Applicable
7.1.3.1.3 Research and Studies

No Applicable
7.1.3.1.4 Policy and Guidance

Documents pertaining to Policy and Guidance refer to Appendix B, References.
7.1.3.1.5 Requirements Generation

Documents pertaining to policy and guidance are listed in Appendix B, References.
7.1.3.1.6 Synchronization

Distribution of TADSS will be synchronized with USF fielding plans.
7.1.3.1.7 Joint Training Support

No Joint Training Support projected at this point.
7.1.3.2 Evaluation

Through repositories, newsletters, and the CALL website; there are documents currently being used in theater operations and lessons learned from operators and leaders who have recently been deployed. Internal evaluation will be conducted at unit level on the soldiers ability to operate and maintain the HMDS variants and sub-system. This information will be used to analyze and update training, critical tasks and doctrine.
7.1.3.2.1 Quality Assurance (QA)

The QAO, USAES will evaluate the quality of sustainment training. External evaluations will focus on the use of task trained, the proper application of those tasks, and identification of tasks not trained but needed. This information will be used to analyze and update training, critical tasks and doctrine.
7.1.3.2.2 Assessments

A PFTEA will validate sustainment training to ensure that a mission requirement is met. Evaluation assistance will be given from the USAES in the form of on-site surveys and follow-up reporting of feedback from gaining units. The post fielding evaluation will provide findings and actions taken by the USAES to correct deficiencies for gaining Commanders.
7.1.3.2.3 Customer Feedback

Leaders will assess HMDS training products, processes, and services every time they use them to conduct training. Copies of their assessments will be provided to USAES DOTLD. Their assessments will consider:

- The usefulness of HMDS training products in providing a relevant training environment.
- The cost for use and ownership.
- The condition and availability of the product, process, or service.
- The outcomes achieved.
Sources of lessons learned that can be incorporated into operational training include CALL archives, Center for Engineer Lessons Learned, newsletters, training AARs, etc. Units will conduct AARS after training events and submit lessons learned for appropriate documentation.
7.1.3.3 Resource Processes

Installations resources must be capable of exercising all HMDS capabilities. These capabilities are: (1) Mine and IED Detection by use of GPR; (2) Sufficient range space to provide a minimum safe distance as per guidance in appropriate TM. Ref para 6.1.3.3
8.0 Self-Development Training Domain

Individual skills shall be integrated into the training of the HMDS into a route clearance companies to support combined arms maneuver and sustainment operations as a part of the Army Training Information System (ATIS).
8.1 Self-Development Training Concept and Strategy

Distributed learning Media for delivering DL enable the course designed to provide structured and sequenced training instruction via a variety of media. This offers learners opportunities to apply their personal learning skills to master the required training. Delivery media technologies include-

a. Interactive Multimedia Instruction (IMI) delivered on the Internet via the World Wide Web (WWW), that is, web-based training (WBT), as asynchronous or synchronous instruction.

b. Interactive Multimedia Instruction delivered via compact disk-read only memory (CD-ROM) as asynchronous instruction.

c. Synchronous instruction delivered via video teletraining (VTT) courses, modules, and lessons.

d. Networked simulations (for example, virtual and constructive simulations).

e. Legacy Army Correspondence Courses Program (ACCP), courses, phases, and sub-courses (modules) delivered as paper-based materials or digitized for delivery via WBT or CD-ROM.
8.1.1 Product Lines

The MATDEV will provide units with a complete TSP, dL based IMI during NET.
8.1.1.1 Training Information Infrastructure

Under the four areas below the TII may require further analysis; however, preliminary analysis for these areas and findings are described in the respective paragraphs.
8.1.1.1.1 Hardware, Software, and Communications Systems

Multi-media disks and other training materials developed for conduct of NET training will be left with the unit for use in follow-on operational and self-development training.
8.1.1.1.2 Storage, Retrieval, and Delivery

Training Packages, TMs, and other forms of media are to be developed IAW TRADOC Reg 350-70 for access by authorized users. These products will be available through means such as RDL, DL repositories, CALL repositories, AKO, DKO and VT. These products will be written IAW the TDC process and formatted in an TDC POI/TSP format.
8.1.1.1.3 Management Capabilities

Refer to para 6.1.1.1.3
8.1.1.1.4 Other Enabling Capabilities

Refer to Para 7.1.1.1.4
8.1.1.2 Training Products

TSPs will be based off the critical task lists for the skill levels being instructed. The instructional methods for operators, (including operator maintenance) and functional areas above the operator is the NET leave behind package which includes: operator and Maintenance level TSPs, CBIT software, and the DTT TSPs. The self-development training plan will include the CBIT software to maximize student informational understanding of the HMDS and characteristics.
8.1.1.2.1 Courseware

Self-development courseware will be designed using methods which facilitate learning. Examples include: contractor provided ICW, IMI, and/or Web-based instruction. All courseware will be developed using the approved TRADOC learning management system and the SAT process.
8.1.1.2.2 Courses

TSPs intended for unit use in sustainment training will be available through the RDL. Collective, individual training and doctrinal information that is delivered to units will be available to individual Soldiers through the RDL and the Army Training Digital Library (ATDL). The TDC database is a working repository of training material, developed by the institution, which includes above information as well as CATS, POIs, TSPs, lesson plans, etc.
8.1.1.2.3 Training Publications

STP 5-12B14-SM-TG, Soldier's Manual and Trainers Guide, MOS 12B, Combat Engineer, Skill Levels 1/2/3/4, will require significant revision to incorporate the capabilities of the new HMDS. Unit CATS must be updated to incorporate individual and collective tasks to support the HMDS.
8.1.1.2.4 Training Support Package (TSP)

Self-Development training in units will be managed and executed by command selected NET-trained NCOs. During NET training, lesson plans and student guides will be provided in a format that will provide all information required for unit training. Multimedia TSP(s) will be developed by the MATDEV and validated by the RDD-AM/STID, which shall be designed to support self-development training as well as NET and institutional training.
8.1.1.3 Training Aids, Devices, Simulators and Simulations (TADSS)

TADSS such as training aids, job aids, CBIT software, and video training media will be developed to support operational sustainment training, and provided to the unit as a leave-behind package at the NET. Training/job aids will include a smart book (graphical training aid) for the HMDS. These TADSS can be used for Self-development, unit and Institutional training.
8.1.1.3.1 Training Aids

Graphic training aids to support sustainment training will include the publication of operator and maintainer smart books for the HMDS to be used for self-development training.
8.1.1.3.2 Training Devices

Refer to para 7.1.1.3.2
8.1.1.3.3 Simulators

CBIT will be developed to support the HMDS. CBIT is a computer based level one simulation that will familiarize the Soldier on the components, characteristics, operation and maintenance of the HMDS. The CBIT module will also focus on team development and the choreography necessary to safely employ and retrieve the HMDS. This will be part of the NET leave behind package. CBIT will be SCORM compliant.
8.1.1.3.4 Simulations

Refer to \textit{para 7.1.1.3.4}
8.1.1.3.5 Instrumentation

Refer to para 7.1.1.3.5
8.1.1.4 Training Facilities and Land

Not Applicable at this time.
8.1.1.4.1 Ranges

Not Applicable at this time.
8.1.1.4.2 Maneuver Training Areas (MTA)

Not Applicable at this time.
8.1.1.4.3 Classrooms

No new classrooms are currently required for individual training.
8.1.1.4.4 CTCs

Not Applicable.
8.1.1.4.5 Logistics Support Areas

Refer to para 7.1.1.4.5
8.1.1.4.6 Battle Command Training Centers (BCTC)

Refer to para 6.1.1.4.6
8.1.1.5 Training Services

Training packages, TMs, and other forms of media are to be developed IAW TRADOC Reg 350-70 for access by authorized users. These products will be available through means such as RDL, dL repositories, CALL repositories, and VT. All will be available through USAES links on the AKO website.
8.1.1.5.1 Management Support Services

Refer back to 7.1.1.5.1
 Requirement for acquisition support services for the self development training domain is yet to be determined.
8.1.1.5.3 General Support Services

Typical general support services (such as distribution and replication) will be required to support training in the self-development domain; any requirement for additional support services such as video production services and TADSS development, procurement, distribution is yet to be determined.
8.1.2 Architectures and Standards Component

Refer back to para 7.1.2
8.1.2.1 Operational View (OV)

Refer back to Para 7.1.2.1 Operational View.
8.1.2.2 Systems View (SV)

Refer back to 7.1.2.2
8.1.2.3 Technical View (TV)

Not Applicable
8.1.3 Management, Evaluation, and Resource (MER) Processes Component

The MSCoE/RDD-AM/STID & USAES, DOTLD, will conduct periodic surveys to obtain feedback on the effectiveness of the HMDS NET leave-behind package training material at the units and how it impacts the unit level training/missions. This information will be used to analyze and update training, critical tasks and doctrine.
8.1.3.1 Management

The MSCoE/RDD-AM/STID & USAES, DOTLD, will manage the HMDS effort as the TNGDEV. TNGDEVs within each of these organizations are charged with ensuring all aspects of training are identified and implemented. Both organizations will participate in strategy development with regards to tactical operations and training. Both organizations will monitor, comment on, and attend concept development and experimentation meetings dealing with the HMDS. DOT required approval of training products. USAES/DOTLD will maintain training products and manage storage and access to these items.
8.1.3.1.1 Strategic Planning

The self-development strategic planning should not be different than operational domain. Refer to 7.1.3.1.1
8.1.3.1.2 Concept Development and Experimentation (CD&E)

The analyses identified the required tasks to detect and mark full spectrum of explosive hazards during military operations.
8.1.3.1.3 Research and Studies

SLEP research and studies of current Vehicle Mounted Mine Detector (VMMD) in service have determined that development of new HMDS and STRAP be initiated.
8.1.3.1.4 Policy and Guidance

Documents pertaining to policy and guidance are listed in Appendix B, References.
8.1.3.1.5 Requirements Generation

Requirements documents for the HMDS are listed in Appendix B, References.
8.1.3.1.6 Synchronization

Development and production of TADSS must be synchronized with end item acquisition in order to meet the goals of the USF, TRADOC, ATSC-STID and integration into TRADOC PAM 350-9.
8.1.3.1.7 Joint Training Support

Joint training is not anticipated at this time, information will be updated if/when any proposed training plans are requested.
8.1.3.2 Evaluation

Refer to para 6.1.3.2
8.1.3.2.1 Quality Assurance (QA)

The QAO, MSCoE and USAES/DOTLD will evaluate the quality of self-development training. External evaluations will focus on the use of task trained, the proper application of those tasks, and identification of tasks not trained but needed. This information will be used to analyze and update training, critical tasks and doctrine.
8.1.3.2.2 Assessments

A PFTEA ensures HMDS training capabilities trains Soldiers, leaders, and units to standard. USAES will conduct a PFTEA approximately one to two years following the FUE. The timeline will depend on unit availability and operational tempo. The PFTEA will be funded through the PM.
8.1.3.2.3 Customer Feedback

Leaders will assess the HMDS dL training products, processes, and services every time they use them to conduct sustainment training. Copies of their assessments will be provided to USAES DOTLD. These assessments will be used to monitor the effectiveness of the self-development training.
8.1.3.2.4 Lessons Learned/After-Action Reviews (AARs)

Course evaluations will be completed by all students at the individual level, an analysis of AARs will be conducted by USAES to ensure current training strategies are updated and relevant to any new doctrine changes in tactical environments. The self development domain is based on the assets of the unit sustainment package, and will be updated accordingly.
8.1.3.3 Resource Processes

40–50 hrs of IMI products will be developed for self-development. These materials will be accessible through Blackboard, ESKN and funded by MATDEV during fielding. Resources for the self-development training domain are included in the overall resource data in ref para 6.1.3.3.
A Milestone Annex

Individual Training Plan

Milestone:  Date

1. Initial Individual Training Plans (ITP) submitted.  TBD
2. Annotated task list submitted.  TBD
3. Course Administrative Data (CAD) submitted.  TBD
4. Training Program Worksheet submitted.  TBD
5. TSPs submitted.  TBD
6. POIs submitted.  TBD
7. Digitized copies archived.  TBD
8. Resident courses start date. (If required)  N/A

Field Manuals

Milestone:

1. Requirements identified.  TBD
2. Draft FM changes validated.  TBD
3. FM outlines approved.  TBD
4. FM coordinating draft completed.  TBD
5. Print/digitization request initiated.  
   TBD

6. Approved digitized Camera Ready Copy (CRC) submitted.  
   TBD

7. Replication/distribution completed.  
   TBD

Army Training Literature

Note: Includes the SM, TG, and ARTEP products.

Milestone:

1. Analysis completed.  
   TBD

2. Draft SM, ARTEP MTP, and TG.  
   TBD

   TBD

   TBD

5. Replication/distribution completed.  
   TBD

Interactive Multimedia Instruction/Distance Learning

Milestone:

1. Requirements identified and submitted for approval.  
   21Jan09

2. Requirements approved by ATSC and TRADOC.  
   TBD

3. Resources identified.  
   TBD

4. Courseware developed and validated.  
   TBD
5. Master materials to ATSC for replication and distribution. TBD

6. Replication/distribution completed. TBD

Training Effectiveness Analysis (TEA)

(Conducted in-house, by contract, Training Development and Analysis Activity, TRADOC Analysis Center, or PM)

1. Interim TEA developed. TBD

2. TEA updated for Milestone Decision Review A TBD

3. TEA updated for Milestone Decision Review B TBD

4. TEA updated for Milestone Decision Review C TBD

5. PFTEA planned. TBD

Army Visual Information Production and Distribution Program

Milestone:

1. High-risk tasks and jobs identified. TBD

2. Storyboards validated. TBD

3. DAVIPDP requirements submitted to ATSC. TBD

4. Requirements approved by the Department of the Army. TBD

5. Production initiated. TBD
6. Replication/distribution completed. TBD

TADSS

Milestone:

1. High risk, hard-to-train tasks identified. TBD

2. Need for TADSS identified. 1 Dec 08

3. TADSS concept validated. TBD

4. TADSS incorporated into the STRAP (part of the CATS). 1 Dec 08

5. Analytical justification using the TEA provided. TBD

6. Training ORD developed, if required. TBD

7. TADSS effectiveness validated. TBD

8. TADSS incorporated into the ORD. TBD

9. MOS-specific milestones/requirements for TADSS developed and incorporated in the integrated training strategy. TBD

Facilities

Milestone: Date

1. Range and facility requirements identified. N/A

2. Identification of construction requirements completed. N/A

3. Construction requirements submitted to Major Command (MACOM). TBD
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<td>Requirements validated and updated.</td>
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<td>Supporting requirements identified and availability coordinated.</td>
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<td>6.</td>
<td>Installation and other construction requirements submitted to MACOM.</td>
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<td>7.</td>
<td>Refined construction requirements and range criteria forwarded to MACOM.</td>
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<td>Construction initiated.</td>
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### Training Ammunition

**Milestone:**

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<td>Ammunition identified.</td>
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9. Production entered. N/A

SYSTEM ACAT OFFICE SYMBOL AS OF DATE

Husky Mounted Detection System ATSE-TD-WM-E
(HMDS)

POIINTS OF CONTACT NAME OFFICE SYMBOL TELEPHONE

MATERIEL COMMAND Program Manager

TRADOC PROponent USAES ATSE

TSM

CD: Mr. Jeff Venus ATSE-CDE (573) 563-7994 DSN 676-7994

TD: Mr. Martel Goldman ATSE-TD-WM-E (573) 563-6302 DSN 676-6302

SUPPORTING PROPONENTS:

ITEM DATE RESPONSIBLE AGENCY/POC TELEPHONE
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TRADOC FORM 569R-E, Aug 89
SYSTEM SCHEDULE

MILESTONE SHEET B

(TRADEC REG 350-9)

SYSTEM: HMDS

TRADEC SCHOOL: USAES

AS OF DATE:

COMPLETED BY: Mr. Martel Goldman

OFFICE

SYMBOL:

ATZT-DT-WM-E

TELEPHONE:

(573) 563-6302

676-6302

TRAINING PACKAGE ELEMENT/PRODUCT:

LEGEND:

MILESTONE BY QUARTER

FY08 FY09 FY10 FY11 FY12 FY13

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12.

01. NET Contract Due to SAM:

02. NET Contract Approval:

03. NET Contract Award:

04. NET Contract Start of Work Meeting:

05. Contractor Start of Work Meeting:

06. IKPT 01:

07. NET POI(s)/TSP(s) Development:

08. Government NET POI(s)/TSP(s) Review:

09. Contractor NET POI(s)/TSP(s) Updates:

10. Government Acceptance of NET POI(s)/TSP(s):

11. IKPT 02/POI(s) Validation:

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NOTES: Use one sheet for each Training Element or Product. See TRADOC Reg 350-70

COMMENTS: (Continue on reverse if necessary)

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B References

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CPD for Mine Protected Clearance Vehicle, CARDS # 06036, 13 May 08
CPD for Vehicle Mounted Mine Detection System, CARDS # 06034, 13 May 09
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# C Coordination Annex

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