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## I. Requirements - Program Overview

Separate requirements now exist for individual body armor protection and load carriage. The currently used OTV was developed in the late 1990s and consists of soft armor (i.e., fragmentation protection) covering the torso, groin, and neck areas and can carry ceramic plates (SAPI) to protect against rifle fire. The OTV, however, was not designed - but is being used for - carrying equipment and items during USMC missions. Consequently, the OTV lacks efficient state-of-the-art load-carrying capabilities and technologies that limit the user's effectiveness.

The objective of this program is to optimize ballistic protection with integrated and modular/scalable load-carrying capabilities to enable individual Marines to configure components to best meet specific mission requirements while optimizing/balancing human factors (e.g., comfort and usability), protection (from enemy threats and environment), and cost (production and maintenance).

Market research in the form of an industry day conference and a Request for Information (RFI) have been used to obtain industry input. A number of potential commercial products with viable solutions have been identified. Based on that market research effort, the Marine Corps will leverage its expertise in warfighting operational/capability needs and related constraints with industries' established expertise and capabilities to design, develop, produce, and support near and far term solutions. The OTV- load bearing integration program goals will be accomplished in two separate but coordinated phases.

Efforts have also been undertaken in the form of "internal" market research. That is, extensive data gathering and analysis was performed with Marines at Camp Lejeune, NC and Camp Pendleton, CA. Data obtained will provide essential capability need/preference information to complement industry product market research throughout the project.

Two simultaneous acquisition approaches are contemplated:

1. A Near Term (FY06 - FY07) solution will be pursued to meet immediate armor protection needs of Marines engaged in current combat operations. This integrated OTV version will combine the capabilities to carry the ballistic protection and combat load. The "system" will better integrate the front and back Enhanced Small Arms Protective Insert (E-SAPI) and Side SAPI plates, extend lower back protection, provide a modified protective collar, and have a quick-release (doffing) mechanism. Users have indicated a need for a more efficient opening/closing OTV design vice current front-opening OTV design. The system will also be compatible with the current QuadGard leg and arm protection components. Interface compatibility with individual weapons and communication equipment needs, generated for Marine Corps Distributed Operations, will also be accommodated.

Due to the availability of and monetary investment the USMC has made in soft armor, the removable soft armor currently used in the OTV will be re-used as Government Furnished Equipment (GFE) in concert with the ultimate industry product solution. An Acquisition Objective (AO) of 60,000 is projected to meet anticipated in-theater needs. Berry Amendment restrictions will apply to any future procurement. In designing/developing the integrated OTV, companies will be expected to apply best practice human-factors, casualty reduction analysis, and business analysis to meet the needs of Marines with a best value solution. It is envisioned that the Government will award a sole-source contract, using

other than full and open competition for this "urgent and compelling" acquisition (See part 6 of the Federal Acquisition Regulation).

The anticipated requirements for the integrated OTV Urgent Universal Needs Statement (UUNS) are as follows:

1) Improved Vest Closure Design - At present, when used with Small Arms Protective Insert (SAPI) plates, Enhanced SAPI (E-SAPI) plates and when carrying a combat load, the Velcro secured front closure of the current OTV has a tendency to open. This is due to the weak closure of worn Velcro, the added weight of the front SAPI plate, and the movement of the wearer. This tendency can result in the wearer unintentionally losing protection in the most vital area (i.e., the front center of the torso). The improved system shall possess a means of closure and fitting that does not open or shift due to the user's movement or the added weight of attached components. This improved vest design shall increase the comfort of the user and prevent unintentional degradation of protection.

2) Quick Release - The current OTV does not incorporate a means to quickly remove the system in the event of an emergency such as a vehicle or aircraft landing in water. The current OTV does not allow removal of the vest from a casualty without raising and moving the casualty or cutting the vest away. While the first option presents significant risk of additional injury to the casualty, the second option is extremely time consuming and laborious for a Corpsman equipped with basic medical instruments. Corpsman have indicated that it can take up to five minutes to remove the OTV with trauma sheers. The improved OTV system shall possess a means of quick release. This capability shall allow users in emergency situations to quickly doff the system and shall provide a means for expeditious treatment of casualties. The improved system must allow access to the torso of a casualty without moving the casualty or cutting away the entire vest. This will allow faster treatment of casualties and reduce the risk of complicating injuries as a result removing the OTV.

3) Increased Area of Vest Coverage - At present, the current OTV is cut higher in the back than in the front and the current system does not provide protection to the lower back and kidney area of the user. The improved system shall expand the area of soft armor coverage for the lower back of the user. It is desired that this system be modular, so that it can be quickly and easily removed or added depending upon the tactical situation and mission requirements. This expanded area of coverage must extend low enough to provide protection for the kidneys of the wearer when wearing a properly sized vest and must not interfere with Marines conducting vehicle convoy operations.

4) SAPI/Side-SAPI Integration - The current OTV integrates built-in pouches for the addition of front and back torso SAPI plates; however, the system does not include pockets for inclusion of Side SAPI plates. As a result Side SAPI plates are currently being affixed to the vest using an accessory pocket that is fastened to the MOLLE weave of the OTV. The improved system shall integrate pouches for standard XS-SAPI plates and both 6x8 and 7x8 Side SAPI plates that allow the user to easily tailor his protection level as the mission dictates. The integrated pockets should be incorporated to maximize comfort, ease of use, and range of motion for the user.

5) SAPI/Side-SAPI adjustability - The improved system shall allow some degree of adjustment of SAPI/Side-SAPI plates to account for variations in the users' build. This shall allow the user to individually tailor the improved system to provide maximum protection and allow for better fit. The current OTV does not allow for repositioning of SAPI or E-SAPI plates in order to allow for variations in the build of individual wearers.

6) Wiring Integration - The improved system shall provide a means to route and control the wiring associated with individual radios such as the PRR, IISR, and PRC-148. This will prevent entanglement of the user, increase mobility and improve the reliability of the communication system. With expanded fielding of communication systems there is a hazard presented to Marines of becoming entangled or hindered by unrestrained wiring increases. The current OTV provides no attachment points or wiring channels to control

the wiring associated with individual radios. The integrated OTV must possess cable routing for the IISR and QuietPro headset. This specified routing path should protect the cable from snagging and wear. The routing should also allow for easy cable removal and troubleshooting. This capability will also improve the reliability of the system.

7) Rifle Bolster - Currently, the OTV does not provide weapons support and the weapon tends to slide off of the shoulder. The integrated OTV must possess a rifle bolster that aids in the fit and support of all shoulder fired weapon systems in the USMC inventory. It must be on both sides of the vest to provide ambidextrous shooting capability and it is desired that the rifle bolster be easily removed by the user.

8) Compatibility with Family of Improved Load Bearing Equipment (ILBE) - The integrated OTV shall be compatible with all the improvements to carry the loads of the current family of ILBE items with shoulder straps. There should be no interference between shoulder straps and the shoulder area of the OTV to include pressure points due to buckles, rifle bolsters or friction points creating a heat source. The full ILBE load must still be adjustable to the individual and support the yoke attachment across the chest and the hip belt. Additionally, it is desired that the integrated OTV be able to provide a direct connection for the Hydration System or Assault Pack directly to the back face of the OTV without having to use shoulder straps to carry either system. Connection could be made using Fastex Clips that are already on the Assault Pack.

9) 3 Point Sling Compatible - The integrated OTV shall allow full use of the 3 Point Sling and shall be compatible with the new Combat Shooting techniques developed by Weapons Training Battalion (WTBN) and Training and Education Command (TECOM).

10) Drop Holster Compatible - The integrated OTV must be compatible with current drop holsters in the inventory or planned drop holsters that can be identified. The OTV must not constrain the Marine from attaching or using his drop holster.

11) Off Center Dual MOLLE Weave - The integrated OTV shall allow movement of various pouches by having a dual MOLLE Weaver, one weave right under another, but with the bar tacking offset one-half width of the MOLLE weave. This would allow, especially on smaller sized vests, movement of a pouch to the left or right. This is especially critical on areas of the vest where space is constrained (i.e., the upper chest region). However, off center MOLLE weave may not be required on 100% of the vest (i.e., mid/upper back).

12) System comfort - The improved system should maximize user comfort through a comprehensive analysis of user feedback related to comfort. While emphasis should reside with ballistic protection, user comfort should be considered as an equal component of mission success. The MCSC sponsored OTV user conferences have identified multiple areas for improvement of the current OTV system. These include, but are not limited to:

- Ergonomic
- Fit (chest, length, shoulder width, neck, arm openings, waist);
- Adjustability (retention, range, and ease of, girth, length);
- Stability (armor, vest, pouch);
- Compatibility with weapons (ammunition access, shouldering, firing postures, three-point sling),
- Durability (vest and pouch closures, stitching, wear ability, chemical resistance, water resistance, stain resistance);
- Storage pouches (security, speed and ease of mounting; compressibility);
- Pouch closures (one-handed operations, ease of insertion and extraction, closure security, and temporary closure).

13) Fabric Requirements - The integrated OTV shall possess a fire retardant capability and will at least possess the same durability capabilities of the current OTV. The Government seeks a material solution that balances weight reduction, heat retention, durability and that possesses a fire retardant capability.

14) Contractor Logistics Support (CLS) - The integrated OTV program shall require CLS and will include at a minimum:

- CONUS/OCONUS OTV training and retrofitting plan;
- An integrated logistics support plan to track and sustain the integrated OTV program.

All offerors shall submit a Statement of Work (SOW) describing what they will provide and how they will satisfy the performance capabilities (training, retrofitting and sustainment) within described constraints (i.e., SAPI, Side-SAPI and soft armor components described above). All interested parties must also be prepared to provide a corresponding CLS plan to describe the means, methods, and resources they will use to satisfy USMC fielding/training requirements.

2. FY 08/09 Next-Generation Solution. Through spiral development, attainment of longer-range (FY08- FY09) capability goals will seek to leverage then-emerging technology improvements in flexible armor, ballistic protection load-bearing, and active cooling/heat reduction to improve upon the near term equipment solution. The Next-Gen OTV shell will be redesigned to carry a Marine's assault load (i.e. magazines, water, grenades, etc.). It will use then state-of-the-art load carriage techniques to optimally distribute the load over the torso. The fully integrated system will support Armor Protection Levels (APL) and incorporate product improved QuadGard components and will be compatible with future Headborne System developments as well. Interface compatibility with individual weapons and communication equipment needs generated for Marine Corps Distributed Operations will also be accommodated. An AO of 198,000 is projected in order to meet the overall Marine Corps requirements.

## II. Acquisition and Contracting Approach - Near Term

An accelerated acquisition strategy will be pursued for the near term solution in view of the compressed schedule requirements driven by an anticipated Urgent Universal Needs Statement (UUNS) and market investigation results.

Based on internal and industry market research performed (and ongoing), PM ICE will invite a set of the most qualified commercial-product vendors to submit initial prototypes for inspection by Subject Matter Experts (SMEs) with a view towards making small, purchases of test quantities for a Limited User Evaluation (LUE) (est. 25 each) and Field User Evaluation (FUE) quantities. During each step of the evaluation process, PM ICE (and supporting contractors) will work closely with each vendor and note minor modifications to each vendor's candidate product solutions in an iterative manner to mitigate performance risk, assess ongoing degree of vendor interest in competing, and ensure that a best value final solution is achieved. Those vendors whose prototype solutions that are found to be unwilling or incapable of incorporating important minor modifications will not be considered further in the competition (See the Milestone schedule below for more details).

An LUE will be conducted at Quantico, VA using Marines of various Military Occupational Specialties (MOS) (both male and female) from various units. Basic form, fit, and function evaluations, along with weapons interface compatibilities, ILBE compatibility, and limited vehicle operations of Product Demonstration Models (PDMs) will be evaluated. Each vendor will provide twenty-five PDMs, broken down by tariff sizes. Government Furnished Equipment (GFE) will include OTV issue soft armor inserts and SAPI/Side-SAPI plates.

Operational Marine units, comprised of an infantry platoon and a composite platoon of other representative user MOSSs, will participate in an FUE. Each vendor will provide fifty PDMs, broken down by tariff sizes. Part of the structured FUE evaluation will include training at a realistic Iraq styled combat town facility.

Milestone Schedule (Anticipated). Key acquisition milestone activity dates for the near term acquisition effort are as follows:

- Schedule and conduct meetings with invited vendors to discuss developing acquisition strategy and closer inspection of their commercial items (discussed in RFI submissions): Mid-Late Feb 06

- Vendors provide commercial/commercial-modified prototype based on USMC operational info provided in earlier meeting: Mid Mar 06

. Government buys limited quantity Product Demonstration Models (PDMs) quantities from identified companies for LUE purposes from those offerors with viable solutions (25 each): Late Mar 06  
Conduct LUE: Early Apr 06  
Screen high potential products/vendors: Mid Apr 06  
Confer PDM changes with remaining vendors: Mid-Late Apr 06  
FUE quantities acquired: Early May 06  
PDM quantities for FUE delivered (50 each): Early-Mid May 06  
FUE completed: Early Jun 06  
Identify best product solution Early Jul 06  
Sole-Source contract awarded: Late Jul 06  
Initial Operational Capability (IOC) = 1 Infantry Battalion: 2d Qtr FY07.

### III. Acquisition and Contracting Approach - Long Term.

A separate full and open competitive contracting effort for an R&D design with initial issue production options (ID/IQ) is envisioned for this effort. This acquisition will seek to optimize load carrying and the latest ballistic protection/technologies. An LUE, FUE, and ballistic testing will be utilized in conjunction with the source selection process. An evaluation premium will be placed on an open architecture solution that facilitates insertion of future ballistic technology designs. As indicated at the OTV Industry day on 21 December 2005, this acquisition strategy is being refined and will be published to industry at a future date. All interested offerors should monitor the GPE website for future notifications and information regarding the USMC's long-term effort.