

**Marine Personnel Carrier (MPC)  
Demonstration and Studies  
Statement of Work (SOW)**

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# 1 BACKGROUND AND OVERARCHING TERMS / CONDITIONS

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## 1.1 PURPOSE

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The purpose of this contract is to provide the United States Marine Corps (USMC) with market research data through system demonstrations and studies for the following four (4) focus areas: (1) water performance, (2) survivability, (3) human factors/stowage capacity, and (4) potential for United States (US) content. These demonstrations and studies are required to assist the USMC with evaluating the affordability, feasibility, and performance of mature and near-mature systems and components. The USMC will use these demonstrations and studies to assess the capability of meeting draft requirements and determine vehicle design areas that require improvements during MPC development.

## 1.2 MISSION

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The MPC requirement is designed to provide expeditionary protected mobility and general support lift to the Marine infantry battalion as part of a Ground Combat Element (GCE) based maneuver task force. The MPC requirement will be filled with an advanced generation eight-wheeled Armored Personnel Carrier (APC). The MPC fulfills the medium combat capability requirement within the Service's Ground Combat and Tactical Vehicle Portfolio and will serve to better balance the Marine Corps' mobility requirements across the range of military operations. As a new start initiative, the MPC is not a replacement vehicle but serves to mitigate a shortfall in APC based protected mobility. Specifically the MPC will provide effective land and tactical water mobility (shore-to-shore) and high levels of force protection and survivability against blasts, fragmentation, and kinetic energy threats while supporting the combat-loaded Marines.

The MPC Program Management Office (PMO) seeks to better understand the capabilities of Non-Developmental Items (NDI) to meet water performance, survivability, and human factors/stowage capacity requirements. In addition, the MPC PMO is interested in learning how US content of NDI solutions can be maximized over the MPC production cycle.

## 1.3 CONTRACTING OFFICER'S AUTHORITY

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The Contracting Officer (CO) is responsible for ensuring the performance of all necessary actions for effective contracting, ensuring compliance with the terms of the contract, and safeguarding the interests of the US in its contractual relationships. Accordingly, the CO is the only individual who has the authority to enter into, administer, or terminate this contract. In addition, the CO is the only person authorized to approve changes to any of the requirements under this contract and, notwithstanding any provision contained elsewhere in this contract, the said authority remains solely with the CO.

## 2 APPLICABLE DOCUMENTS

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The Contractor shall use the following documents and specifications in the performance of this contract.

### 2.1 GOVERNMENT FURNISHED INFORMATION

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Unless otherwise specified, electronic copies of GFI items will be provided to the Contractor on a Compact Disc (CD) within 30 calendar days after contract award. The Contractor shall provide for accountability, security, and storage for the Government Furnished Information (GFI) provided. GFI provided after contract award will be listed in Section J. The Contractor shall notify the Government of deficiencies in GFI provided in accordance with Contract Data Requirements List (CDRL) A001 that addresses the data requirements of Data Item DI-MGMT-80596 (Government Furnished Information Deficiency Report). The Government will provide the following information:

- All Task Areas
  - Technology Readiness Level (TRL) Definitions List
  - Definitions List
  - Naval Sea Systems Command (NAVSEA) Prohibited and Controlled Chemical List
- Water Performance Task Area
  - Water Performance Demonstration Plan
  - Safe and Ready Check List (hard copy to be provided during test site visit/coordination meeting)
- Survivability Task Area
  - Survivability Demonstration Plan
- Human Factors/Stowage Capacity Task Area
  - Human Factors/Stowage Capacity Demonstration Plan
- US Content Task Area
  - US Content Configuration Matrix Template

Department of Defense (DoD) Product Support Business Case Analysis Guidebook. Guidebook can be found at [www.acq.osd.mil/log/mr/library/BCA\\_Guidebook\\_April2011.pdf](http://www.acq.osd.mil/log/mr/library/BCA_Guidebook_April2011.pdf)

## 3 DETAILED REQUIREMENTS

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The Contractor shall provide the necessary resources (personnel, facilities, processes, and enablers) to execute all tasks required herein. The Contractor shall complete requirements identified herein in a manner that thoroughly fulfills performance objectives within established schedule requirements and established controls. The Contractor shall use qualified personnel with the commensurate analytical, operational, and technical skills and experience to perform the requirements of this contract. The Contractor shall ensure all personnel attending demonstration events at test sites speak fluent English and submit visit requests to applicable test agencies.

The Contractor shall participate in Government led demonstrations and conduct studies with solutions based on systems, subsystems, and components in the form of NDI at a TRL 6 or higher.

The Contractor shall maintain open lines of communication with authorized Government personnel throughout the contract.

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### 3.1 PROGRAM AND DATA MANAGEMENT

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#### 3.1.1 PROGRAM MANAGEMENT

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The Contractor shall provide a single Program Manager (PM) for this contract. The PM shall be responsible for the accomplishment of all tasks required by this contract. The PM shall plan, organize, manage, schedule, implement, control, analyze, and report on all elements of the contract. The PM shall have resources and authority to efficiently and effectively execute tasks necessary to complete the requirements described herein. The PM shall be prepared at all times to present and discuss the status of contract activities, requirements, and issues with the CO and Contracting Officer's Representative (COR). The Contractor shall provide Program Management Plan updates in accordance with CDRL A002 that addresses the data requirements of Data Item DI-MGMT-81797 (Program Management Plan) to include identification of PM and all team members, detailed program schedule in Microsoft (MS) Project showing activities and resources required for the first three (3) levels of the Work Breakdown Structure (WBS), major program tasks and events, identification of program risks, mitigation, and potential impact to cost/schedule/performance. Program Management Plan updates are required contract deliverables.

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#### 3.1.2 SCHEDULE PLANNING

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The Contractor shall maintain an accurate schedule of program events and recommended program schedules, including review and evaluation techniques, which provide for the earliest delivery schedule while at the same time satisfying all requirements. The program schedule shall include all significant events, and a Program Planning Milestone Chart shall depict major tasks and events from start to completion of the contract. The Contractor shall notify the Government in writing of any anticipated or projected work stoppages or delays that may impact schedules.

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#### 3.1.3 MONTHLY PROJECT STATUS REPORT

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The Contractor shall provide monthly project status updates for the duration of this contract. The Contractor shall summarize the following for each monthly status report: (1) work completed (inclusive of meeting action items); (2) work planned for upcoming month; (3) contract tasks not completed; (4) significant accomplishments; (5) problems or delays; (6) corrective actions; (7) schedule updates; (8) Contractor/Government meetings held during the month; and (9) other program or personnel changes. The Contractor shall prepare and submit these monthly Project Status Reports in accordance with CDRL A003 addressing the data requirements of Data Item

DI-MGMT-80227 (Contractor's Progress, Status, and Management Report). The Contractor shall use the Project Status Report as an execution tool to assess progress in meeting the contract requirements. The first Project Status Report delivery shall be 30 calendar days after contract award.

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### 3.1.4 INVOICES

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The Contractor shall comply with the invoicing requirements specified in Section G. A copy of each invoice submitted to the COR must be provided to the CO and the Program Manager Advanced Amphibious Assault (PM AAA) Financial Manager within three (3) calendar days of submittal to Wide Area Workflow (WAWF) in accordance with CDRL A004 that addresses the data requirements of DI-MGMT-81651 (Contract Invoicing and Payment Report). This is in addition to the requirements to submit invoices through WAWF.

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### 3.2 SECURITY

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The Contractor shall define and describe any unique handling requirements commensurate with assigned classification, to include handling, storage, and disposal as required by the National Industrial Security Program Operating Manual (NISPOM). The Contractor shall ensure that all personnel attending classified events have a need to know, are cleared to attend, and have the required security clearance. The Contractor shall ensure that no foreign nationals are provided or exposed to classified events or materials. Mechanics working on or repairing demonstration articles do not require a clearance, provided that details of the demonstration or data are not provided or gained through exposure. The Contractor is responsible to coordinate personnel visit requests in accordance with established guidelines and regulations.

Videos and photographs obtained during all the demonstrations shall be exclusively collected by the Government and classified in accordance with the MPC Security Classification Guide.

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### 3.3 MEETINGS, FORMAL REVIEWS, CONFERENCES, AND AUDITS

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#### 3.3.1 CONTRACTOR RESPONSIBILITIES

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The Contractor shall plan, host, attend, coordinate, support, and conduct the meetings, formal reviews, conferences, and audits (hereinafter called "reviews"). The reviews shall be conducted at Government and Contractor facilities as indicated in the table below. The Contractor shall prepare agendas and conference presentation materials and provide minutes and reports following each review. Action item documentation, assignment of responsibility for completion, and due dates shall be determined prior to adjournment of all reviews. A list of attendees, copy of presentation materials, summary of all action items, and list of responsible parties and estimated completion dates shall be included with the minutes.

For Contractor led reviews, the Contractor shall provide agendas in accordance with CDRL A005, Data Item DI-ADMN-81249A (Conference Agenda).

For all reviews, the Contractor shall provide meeting minutes in accordance with CDRL A006, Data Item DI-ADMN-81250A (Conference Minutes). A list of attendees, copy of presentation materials, summary of all action items, and list of responsible parties and estimated completion dates shall be included with the minutes.

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### 3.3.2 REVIEWS

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The Contractor shall participate in the following reviews:

<b>Activity</b>	<b>Location</b>	<b>Date Due</b>
Contract Award (no review, for reference only)		Day 0
Post Award Conference (Contractor Led)	Contractor Facility	Within 30 calendar days
Test Site Visit/Coordination	Test Site	60 calendar days prior to demonstration
Monthly Program Reviews (Contractor Led)	Contractor Facility or Teleconference	Every 30 calendar days
Test Readiness Review	Test Site	30 calendar days prior to demonstration
Daily Test Director Meeting to include Vehicle/Test Asset Status	Test Site	Daily during demonstration
End-of-Demonstration Review	Test Site	Last day of demonstration
Report Delivery Meeting	Contractor Facility	60 calendar days after demonstration

#### 3.3.2.1 POST AWARD CONFERENCE

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The Contractor shall host a Post Award Conference (PAC) at the Contractor's facility within 30 calendar days after contract award where the Contractor shall introduce management and key personnel. The purpose of the PAC is for the Contractor to provide the Government their management procedures, provide progress assessments, review technical status, and establish schedule dates for near-term critical meetings/actions.

### 3.3.2.2 TEST SITE VISIT/COORDINATION

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The Contractor shall participate in a Government led test site visit/coordination meeting at each test site, to be held no later than 60 calendar days prior to the demonstration date as established at the Post Award Conference. The overall purpose of the visit/coordination meetings is to facilitate Contractor planning for the participation in the water performance and human factors/stowage capacity demonstrations to be conducted at the Amphibious Vehicle Test Branch (AVTB), Camp Pendleton, CA and survivability demonstrations to be conducted at the Nevada Automotive Test Center (NATC), Silver Springs, NV. Visit events/discussion will include the following:

- Water and land test areas to be used during conduct of the water performance, human factors/stowage capacity, and survivability demonstrations
- Vehicle storage areas and maintenance facilities
- Camp Pendleton, AVTB, and NATC access requirements and procedures
- Available logistical support (fuel, vehicle recovery, etc.)
- Instrumentation and interface requirements
- AVTB and NATC Standard Operation Procedures (SOP) and requirements
- Communication requirements for test operations

### 3.3.2.3 MONTHLY PROGRAM REVIEWS

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The Contractor shall conduct monthly Program Management Reviews (PMRs) to review the Contractor's schedule and technical performance related to the execution of each task item. The Contractor shall coordinate time and locations of meetings with the Government. The first PMR shall be no later than 30 calendar days after the PAC.

The Contractor shall address the following topics at each PMR:

- Current performance against the program management schedule
  - Review of pertinent technical and schedule aspects of each demonstration
  - Overview of:
    - Work tasks scheduled for completion during the preceding period
    - Work tasks accomplished during preceding period
    - Work to be accomplished during next 60 calendar day period
- Current and anticipated technical problems
- Project Risks:
  - Identify schedule and technical risks in terms of probability and potential impact to project
  - Address mitigation plan for risks and status of mitigation actions

For the above topics, the Contractor shall provide agendas to the Government for approval 14 calendar days prior to each review in accordance with CDRL A007, Data Item DI-ADMN-81249A (Conference Agenda).

The Contractor shall prepare and submit minutes in accordance with CDRL A008, Data Item DI-

ADMN-81250A (Conference Minutes) and address the following: A list of attendees, copy of presentation materials, summary of all action items, list of responsible parties and estimated completion dates.

#### 3.3.2.4 TEST READINESS REVIEW

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The Contractor shall participate in a Government led Test Readiness Review (TRR) at the test site facility 30 calendar days prior to the demonstration start date as established at the Post Award Conference. The purpose of the TRR is to ensure the system is ready to proceed into formal demonstration. The TRR assesses demonstration objectives, demonstration methods and procedures, scope of demonstrations, and safety. Additionally, the TRR will confirm that required resources have been properly identified and coordinated to support planned demonstrations. At the TRR, the Contractor shall brief system readiness for demonstration in the following areas:

- System performance (i.e. readiness for planned demonstration events)
- Availability and qualifications of Contractor operators and maintainers
- Logistical readiness (availability of spare parts and tools, support requirements such as maintenance bay, overhead crane, etc., and Petroleum, Oil, and Lubricants (POL))
- System safety
- System transportation and storage requirements
- Vehicle configuration to include surrogate subsystems (i.e. radio rack being simulated by mass/space claim surrogates)

The briefing shall be in accordance with CDRL A009, Data Item DI-MISC-80508B (Technical Report-Study/Services).

#### 3.3.2.5 DAILY TEST DIRECTOR MEETING

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The Contractor shall participate in a daily Test Director meeting held at the test site while demonstrations are occurring on the vehicle or test asset. At the meeting, the Contractor shall brief the Government test team on the status of the vehicle or test asset and its readiness to conduct the planned demonstrations for the day in accordance with Test Director guidance.

#### 3.3.2.6 END OF DEMONSTRATION REVIEW

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The Contractor shall participate in an end of demonstration review held at the test site. The purpose of the end of demonstration review is to confirm that all demonstrations have been completed and address any open issues prior to the Contractor departing the test site with the vehicle/test asset and any equipment.

#### 3.3.2.7 REPORT DELIVERY MEETING

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The Contractor shall host a Report Delivery Meeting at a Government coordinated location within 60 calendar days after demonstration completion. The purpose of the Report Delivery Meeting is for the Government to present and provide the completed demonstration report to the Contractor.

### 3.4 WATER PERFORMANCE DEMONSTRATION

The purpose of the water performance demonstration is to assess NDI vehicles capabilities to meet water performance requirements and determine vehicle design areas that require improvements during MPC development. Vehicle design areas that will be assessed include:

- Seaworthiness
- Water speed and maneuverability
- Surf capabilities
- Stability
- Buoyancy percentage
- Center of Gravity
- Plow-in Characteristics

#### 3.4.1 BACKGROUND

The Government requires the MPC, as stated in the draft CDD, to be capable of operating in the sea within the littoral operating area. This tactical level of water mobility will enable shore-to-shore maneuver and complement the operational (ship-to-shore) and tactical levels of mobility of the amphibious combat vehicles. Specifically, the draft CDD requires the following water-related Key System Attribute (KSA):

KSA	Development Threshold	Development Objective
6.2.1 Tactical Water Mobility	The MPC at combat weight will be capable of utilizing riverine and inland water obstacles, to include the sea within the littoral operating area, as maneuver space via a robust tactical swim capability (shore-to-shore). The MPC shall have the capability to swim at six (6) knots (6.9mph) in calm seas with a significant wave height (SWH) of one foot with a two (2) ft plunging surf. A section of six (6) MPCs shall be able to ingress or egress a single point with proper width, slope and trafficability. The MPC shall retain full operational capability after water operations.	The MPC at combat weight will be capable of utilizing riverine and inland water obstacles, to include the sea within the littoral operating area, as maneuver space via a robust tactical swim capability (shore-to-shore). The MPC shall have the capability to swim at six (6) knots (6.9mph) in calm seas with a significant wave height (SWH) of two feet with a 4 ft plunging surf. A section of six (6) MPCs shall be able to ingress or egress a single point with proper width, slope and trafficability. The MPC shall retain full operational capability after water operations. The MPC must possess the ability to self-right.

#### 3.4.2 WATER PERFORMANCE DEMONSTRATION EVENTS

The Contractor shall provide a vehicle and participate in the following planned water performance demonstration events:

Water Performance Demonstrations	Demonstration Objectives
Hull Water Intrusion	To determine the locations of all leak paths into the vehicle through the hull and determine the corresponding leak rates
Speed and Power	To characterize power and trim data for a range of speeds up to

	maximum engine Revolutions Per Minute (RPM) in the forward and reverse directions
Surf Transit	To assess the capability of the vehicle to transit the surf zone to and from the shore in Load Conditions 1 and 3 (LC1/LC3)
Maneuver and Control	To characterize and assess the following capabilities of the vehicle: turning diameters and zigzags for a range of speeds, stopping distance from idle speed, ability to pivot turn in calm water, and reverse speed and reverse steering maneuverability
Plow-in	To characterize the conditions where plow-in is imminent for LC1 and LC3 weight conditions
Forward Speed and Fuel Consumption Estimate	To observe the vehicle's ability to maintain maximum forward speed for one (1) hour and to determine the fuel consumption rate during this demonstration

Demonstration events are described in more detail in Attachment B (Water Performance Demonstration Plan).

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### 3.4.3 TRANSPORTATION AND STORAGE

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The Contractor shall provide and transport a vehicle capable of performing the water performance demonstration events and associated support equipment to AVTB (Camp Pendleton, CA). The Contractor shall obtain all necessary permits and documentation as required to transport the vehicle to AVTB. Following completion of the demonstrations, the Contractor shall transport the vehicle and associated support equipment back to the Contractor's facility. Vehicle weapons are not required for planned demonstrations and shall not be shipped with the vehicle. At the Contractor's discretion, non-serviceable weapon surrogates are acceptable.

The Government will provide secure storage for the vehicle and associated support equipment.

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### 3.4.4 PERSONNEL

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The Contractor shall provide vehicle crew and required maintainer/support personnel to conduct planned demonstrations. The Contractor crew shall operate the vehicle to satisfy the requirements established by the Government Test Director. Contractor personnel shall be fluent in English. The Contractor shall be responsible for obtaining access (e.g. visit requests) to Camp Pendleton and AVTB for their personnel.

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### 3.4.5 MAINTENANCE

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The Contractor shall maintain the vehicle to ensure availability to execute the required demonstrations as scheduled by the Government. The Contractor shall supply all repair and maintenance labor along with repair parts, tools, and any special support equipment to include equipment required for recovery, such as tow bars.

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#### 3.4.6 PERSONAL AND SAFETY EQUIPMENT

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The Contractor shall provide necessary personal and vehicle safety equipment for the conduct of open ocean water and surf crossing operations. Vehicle safety equipment shall include the following: November flag, flash lights, egress lights for troop compartment, United States Coast Guard (USCG) approved navigations lights (portable or attached), external spot light (hand held or attached), boat hooks, hatchet to cut tow lines, and ramp jack (if applicable). Additionally, the vehicle shall be configured with the following: mooring cleats forward and aft (ability to be used for towing up to 5 knots), clearly marked safety warnings (i.e. do not step, keep clear), and access to bilge for de-watering pump hose (2 inches outside diameter hose). Contractor personnel participating in the water operations during the demonstration shall be equipped with the following: fire-retardant suit with extraction straps, fire-retardant gloves/safety glasses, and USCG approved Personal Floatation Devices (PFD), one (1) per each embarked person.

The Government will provide the necessary test site safety equipment (e.g. safety boats, support vessels, surf recovery assets, medical personnel, etc.) required for the conduct of the water performance demonstrations.

The Government will provide additional information to the Contractor on required personal and vehicle safety equipment as required during the test site visit/coordination meeting described in paragraph 3.3.2.2.

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#### 3.4.7 SUPPLY AND LOGISTICS

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The Contractor shall either use the Jet Propellant 8 (JP8) fuel provided by the Government at AVTB or make provisions for their own fueling. The Government will provide information on other available fuel types that may be coordinated for use during the test site visit/coordination meeting described in paragraph 3.3.2.2. The Contractor shall provide its own repair parts, packaged POL, and any other consumables required to support demonstrations.

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#### 3.4.8 COMMUNICATIONS

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The Contractor shall provide a vehicle communication system compatible with the Government communication system (e.g. Vehicular Radio Communication (VRC)-110 Radio system and Portable Radio Communication (PRC)-152 Very High Frequency (VHF) single channel plain text) for the purpose of control during demonstrations.

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#### 3.4.9 INSTRUMENTATION

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The Contractor shall permit and facilitate the installation of required Government instrumentation on the vehicle. The Government will install a "motion pak" (see Figure 3.1 below) on the top of the vehicle, using a single bolt, to collect required data during the water performance demonstration. Volume, weight, power, and interface requirements of the "motion pak" are as follows:

- Weight: 33.2 lbs
- Length: 12.75 in
- Width: 11.25 in
- Height: 11.00 in
- Power requirements: (none) 12V rechargeable batteries
- Interface cable requirements: (none)
- Hole for Attachment: Sized to accept a 3/8 to 3/4 in fastener

Government personnel will demonstrate and answer questions on instrumentation during the Test Site Visit/Coordination meeting described in paragraph 3.3.2.2.

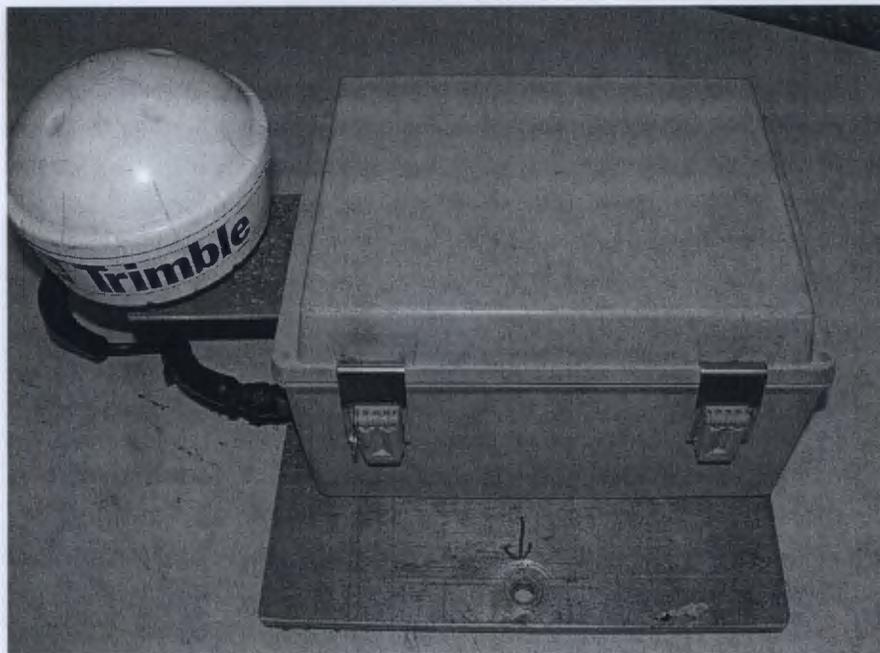


Figure 3.1 “Motion Pak”

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#### 3.4.10 VEHICLE LOADS AND BALLAST PLANS

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The Contractor shall provide ballast plans and ballast for the vehicle at LC1 (Crew and fueled vehicle) and LC3 (Fully loaded vehicle: crew, embarked personnel with existence loads, and two (2) days of supply). The Contractor shall also be required to provide Center of Gravity (CG) information (vertical, longitudinal, and transverse) on its vehicle. Ballast Plans and CG information will be required in accordance with CDRL A010, DI-MISC-80508B (Technical Report-Study/Services) no later than 60 calendar days prior to demonstration. During the test site visit/coordination meeting described in paragraph

3.3.2.2, the Contractor shall coordinate directly with the Government to develop ballast plans to simulate required loads during water testing.

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#### 3.4.11 SAFE AND READY INSPECTION

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The Contractor shall participate in a safe and ready inspection event upon arrival at AVTB for the purpose of ensuring the vehicle is safe and ready for demonstrations. During the safe and ready inspection, the Contractor shall conduct vehicle orientation for Government personnel and assist the Government in the conduct of inspections and checks to ensure safety and readiness for subsequent operations.

The Government will supply a safe and ready check list during the test site visit/coordination meeting described in paragraph 3.3.2.2.

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#### 3.4.12 SCHEDULE

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The Government will conduct the water performance demonstrations and the human factors/stowage capacity demonstration sequentially at AVTB during a planned period of ten (10) working days (Monday through Friday). The demonstration period may be extended as required to accommodate adverse weather conditions. The Contractor shall provide specific estimates of maintenance hours required per hour of operation during the demonstration events.

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#### 3.4.13 DEMONSTRATION REPORT

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The Government will provide to the Contractor a report detailing demonstration results within 60 calendar days of completing the demonstration.

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### 3.5 SURVIVABILITY DEMONSTRATION

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The purposes of the survivability demonstration are to: (1) determine the capability of the candidate vehicle to defeat specified threats listed below from the classified annex dated 6 May 2011; and (2) determine the level of occupant survivability of the candidate vehicle to the specified threats listed below from the classified annex.

- Direct Fire Threats, paragraph numbers 6.1.3.1.1 and 6.1.3.1.2
- Indirect Fire, paragraph number 6.1.3.2
- Direct Blast, paragraph number 6.1.3.3
- Indirect Blast, paragraph number 6.1.3.4

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#### 3.5.1 BACKGROUND

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Requirements analysis for armored amphibious vehicles has shown significant material weight may be necessary to achieve required protection levels. As weight increases it impacts water and land mobility, decreases overall mission performance, and increases cost. This demonstration

will be conducted in order to properly inform the Government and potential Offerors as to their level of survivability in a controlled series of ballistic and blast demonstrations.

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### 3.5.2 SURVIVABILITY DEMONSTRATORS

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The Contractor shall provide two (2) survivability demonstrators. Demonstrator 1 shall be a full-size vehicle with surrogate systems to replicate mass properties for the engine, transmission, communications equipment, and weapon station. Demonstrator 1 shall be ballasted to reflect a fully functional vehicle with proper curb weight, ground clearance, and CG. The ground clearance is defined as the ride height prescribed by the Contractor for operation in an Improvised Explosive Device (IED) environment. At the Contractor's discretion, Demonstrator 1 may be a fully operational vehicle.

Demonstrator 2 shall be a test asset representative of the vehicle configuration (weight, height, ground clearance, etc.) consisting of the troop compartment section with as-integrated armor and as-integrated seats, restraints, and floor assemblies. The demonstrator shall be ballasted to reflect the curb weight, ground clearance, and CG of a fully loaded vehicle or portion thereof. At the Contractor's discretion, Demonstrator 2 may be identical to Demonstrator 1.

Demonstrators 1 and 2 shall have lifting and towing eyes to allow transport to and from the demonstration area.

Demonstration events are described in more detail in Attachment D (Survivability Demonstration Plan).

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### 3.5.3 TRANSPORTATION AND STORAGE

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The Contractor shall transport the survivability demonstrators and associated support equipment to NATC, Silver Springs, NV. The Contractor shall obtain all necessary permits and documentation as required to transport the demonstrators to NATC. Within 30 calendar days following completion of the demonstrations, the Contractor shall be responsible for disposition of the demonstrators and all Contractor property.

The Government will provide secure storage for the demonstrators and associated support equipment.

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### 3.5.4 PERSONNEL

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The Contractor shall provide the required maintainer/support personnel in support of the planned demonstrations. The Contractor support personnel shall be fluent in English. The Contractor shall be responsible for obtaining access (e.g. visit requests) to NATC for their personnel. It should be noted that one (1) or more demonstrations can occur at the same time (e.g. water performance demonstration and survivability demonstration could occur concurrently) and it is the Contractor's responsibility to have required personnel available for all events.

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### 3.5.5 DEMONSTRATOR REPAIR

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The Contractor shall repair the demonstrators after each event to ensure availability to execute the required scheduled demonstrations. The Contractor shall supply all repair and maintenance labor along with repair parts, tools, and any special support equipment (to include equipment required for recovery, such as tow bars) based on the possible outcomes of the blast events in the test outline.

The Contractor shall provide an estimate of parts, time, and resources required to restore the demonstrators to a "full" readiness level between scheduled demonstration events as part of section 3.1.1 Program Management.

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### 3.5.6 INSTRUMENTATION

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The Contractor shall permit Government installation of required Government instrumentation on the survivability demonstrators. Details will be reviewed during the test site visit/coordination meeting described in paragraph 3.3.2.2.

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### 3.5.7 DOCUMENTATION

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The Contractor shall provide a baseline configuration for each demonstrator. The Contractor shall correlate the baseline configuration with documented differences as compared to the representative fully operational vehicle. The Contractor shall provide a vehicle arrangement, seat layout, restraint design, and hull drawing 60 calendar days prior to the demonstration in accordance with CDRL A011, Data Item DI-CMAN-81516 (As Built Configuration List (ABCL)). These items will be used to locate instrumentation within the demonstrator. Prior to demonstrations and in conjunction with the delivery of the demonstrators, the Contractor shall provide documentation in accordance with CDRL A012, Data Item DI-MISC-80508B (Technical Report-Study/Services) that identifies location and volume of all hazardous material 30 calendar days prior to demonstrator delivery. Hazardous materials are defined in Attachment E (NAVSEA Prohibited and Controlled Chemical List).

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### 3.5.8 DEMONSTRATION REPORT

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The Government will provide to the Contractor a report detailing demonstration results within 60 calendar days of completing the demonstration.

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## 3.6 HUMAN FACTORS/STOWAGE CAPACITY DEMONSTRATION

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The purpose of the human factors/stowage capacity demonstration is to demonstrate that two (2) MPC vehicles will be capable of carrying a crew of three (3) Marines per vehicle, a reinforced Marine rifle squad consisting of 17 combat equipped Marines with existence loads and two (2) days of supply. The USMC Reinforced Rifle Squad Loads lists all items that comprise the existence loads and days of supply.

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### 3.6.1 BACKGROUND

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At this time, the MPC Program Office has no data to determine if Contractor's vehicles have been designed to accommodate the size of 5<sup>th</sup> to 95<sup>th</sup> percentile Marines. Additionally, it is important for the Program Office and Contractors to understand the load out (volume and weight) associated with a reinforced Marine rifle squad carrying existence loads plus two (2) days of supply.

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### 3.6.2 HUMAN FACTORS/STOWAGE CAPACITY DEMONSTRATION EVENTS

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In order to inform the Government and Contractor of the ability to transport a reinforced Marine rifle squad using the Contractor's vehicle, the Government will conduct a demonstration of the Contractor's vehicle carrying capacity. The human factors/stowage capacity demonstration will be conducted by the Government at AVTB with participation by the Contractor. The Contractor's vehicle will be loaded with a crew of three (3) with gear and half of a reinforced Marine rifle squad (9 Marines with gear), unloaded, and then reloaded with crew and the other half of a reinforced Marine rifle squad (8 Marines with gear). Issues will be identified and documented. All demonstrations will be conducted statically.

Demonstration events are described in more detail in Attachment F (Human Factors/Stowage Capacity Demonstration Plan).

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### 3.6.3 TRANSPORTATION AND STORAGE

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The vehicle used for the human factors/stowage capacity demonstration will be the same vehicle used for the water performance demonstration, and the two (2) demonstrations will occur at the same location during the same time period.

The Government will provide secure storage for the vehicle and associated support equipment.

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### 3.6.4 VEHICLE CONFIGURATION

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The Contractor shall provide a vehicle that is representative of their proposed MPC solution, including areas such as internal dimensions (i.e. proper flooring, spall liner, internal armor, etc), operational hatches, seats, seat restraint systems, and all Onboard Vehicle Equipment (OVE) for use during the demonstration. For those subsystems that are not installed, the Contractor shall affix representative weight and space claim surrogates. As an example, if a remote weapon station is not installed on the demonstration vehicle, the vehicle must have a representative surrogate for the gunner's control station to simulate the interior space claim of the Remote Weapon Station (RWS).

The Contractor shall provide a configuration report in accordance with CDRL A013, Data Item DI-CMAN-81516 (As Built Configuration List (ABCL)), indicating which subsystems are represented as surrogates, including their respective locations and a comparison of size and weight to the actual subsystems.

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### 3.6.5 PERSONNEL

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The Contractor shall provide required support personnel to conduct the planned demonstrations.

The Government will provide nine (9) Marines to represent the embarked reinforced Marine rifle squad, three (3) Marines to represent the vehicle crew and all associated gear.

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### 3.6.6 MAINTENANCE

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The Contractor shall maintain the vehicle to ensure availability to execute the human factors/stowage capacity demonstration.

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### 3.6.7 VEHICLE LOAD PLANS AND EGRESS PROCEDURE

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The Contractor shall provide a recommended load plan detailing how two (2) vehicles could be loaded to transport a reinforced Marine rifle squad consisting of 17 combat equipped Marines with existence loads and two (2) days of supply. The load plan shall include recommended stowage locations for crew weapons and gear. Weight and volume requirements for crew, embarked personnel with existence loads, and two (2) days of supply are detailed in the USMC Reinforced Rifle Squad Loads document.

The Contractor shall provide tactical land and emergency water egress provisions/procedures in accordance with CDRL A014, DI-MISC-90508B (Technical Report Study/Services).

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### 3.6.8 SCHEDULE

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The Government will conduct the human factors/stowage capacity demonstration either immediately preceding or immediately following the water performance demonstration detailed in section 3.4.

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### 3.6.9 DEMONSTRATIONS REPORT

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The Government will provide to the Contractor a report detailing demonstration results within 60 calendar days of completing the demonstration.

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## 3.7 UNITED STATES CONTENT ANALYSIS

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The purpose of the US content analysis is to document the current US content and future possibilities for the Contractor's proposed vehicle solution. US content is defined as all hardware and software elements in the WBS through level 4 that are manufactured or assembled in the US.

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### 3.7.1 BACKGROUND

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There is a possibility that some of the offered Contractor's vehicles contain components that are manufactured or assembled in countries outside of the US. It is important for the Government to understand the current US content contained in the Contractor's vehicle solution as well as the Contractor's identified possibilities for US content through the MPC production cycle.

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### 3.7.2 UNITED STATES CONTENT ANALYSIS

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The Contractor shall complete an analysis of their proposed MPC vehicle solution using Attachment G (US Content Configuration Matrix Template) to determine the amount of US content currently contained in the proposed solution. The analysis shall include the Contractor's identified US content possibilities. The analysis shall address the benefits, constraints, and trade-offs associated with migration to US content in terms of cost, schedule, performance, and quality. The analysis shall be provided in accordance with CDRL A015, DI-MISC-80508B (Technical Report-Study/Services).