

REQUEST FOR INFORMATION (RFI)

PM MAGTF C2 Hardware as a Service (HaaS)

RFI # M67854-26-I-0172

Description

The United States Marine Corps (USMC) Program Acquisition Executive Marine Corps (PAE MC) Project Manager Marine Air Ground Task Force Command & Control (PM MAGTF C2) is requesting interested sources to provide information in the form of a white paper which describes an approach to providing Hardware as a Service (HaaS), as outlined in this Request for Information (RFI). Information shall be submitted electronically and shall not exceed fifteen (15) pages for all items associated with the RFI.

1. RFI

This RFI constitutes market research under Federal Acquisition Regulation (FAR) Part 10 and is not a Request for Proposals (RFP). No solicitation document exists and formal solicitation will not be issued by the Government because of the responses to this RFI. The information provided will be used by the Government for the purpose of conducting market research. There is no obligation on the part of the Government to acquire any products or services described in this RFI or its responses. Responses to this RFI will be treated only as information for the government to consider. There is no payment for direct or indirect costs that are incurred in responding to this RFI. This request does not constitute a solicitation for proposals or the authority to enter negotiations to award a contract. No funds have been authorized, appropriated or received for this effort. Interested parties are responsible for adequately marking proprietary, restricted or competition sensitive information contained in their response. Pursuant to Federal Acquisition Regulations (FAR) 15.201(e), responses to this RFI are not offers and cannot be accepted by the Government to form a binding contract. The Government will not pay for the information submitted in response to this RFI. Generic capability statements will not be considered. Responses must address capabilities specific to this RFI.

PM MAGTF C2 is soliciting industry input on new and innovative approaches to contract for, provisioning, maintaining, and sustaining the Commercial Off-The-Shelf and Government Off-The-Shelf (COTS/GOTS) infrastructure (software and software centric systems) needed to support Marine Corps command and control (C2) across all echelons in all possible operational environments, including home station operations, exercises, testing, supporting establishment and training, and overseas operational deployments in denied, degraded, intermittent, and low-bandwidth (DDIL) environments. Ideally, the approach should support current Marine Corps maintenance procedures and be aligned with MCO

4790.2C, *Marine Corps Maintenance Management Policy* and MCO 4790.2 series publications. A specific example would be to remove and replace network infrastructure items such as servers, routers, and switches.

Industry solutions may either supplement or replace our current way of doing business. Solutions that require alteration to Marine Corps Regulations or Policies will be considered, but the PMO will ultimately determine if and what changes are necessary. Solutions that require alteration to DoD Regulations, Federal Regulations, or Statutory law will not be considered. The ideal HaaS offering will provide reliable, on-demand access to computing resources (when supportable) for hardware and virtualized software updates and corrective maintenance tools to facilitate cost-effective and efficient operations. Solutions should facilitate maintaining system operational readiness world-wide across every clime and place, 365 days a year, 24 hours a day, 7 days a week. We aim to enhance our ability to deploy, manage, scale, and sustain mission-critical capabilities, applications, and services rapidly while maintaining a secure and compliant environment.

PM MAGTF C2 is requesting interested sources to provide information which demonstrates the capability to meet any or all of the requirements described within this RFI. To facilitate a focused and efficient review process, vendors are encouraged to indicate at the beginning of their response which sections or subsections of this RFI they are responding to and that align with their specific capabilities and product offerings. PM MAGTF C2 recognizes that some vendors may specialize in specific types of equipment, such as heavy-duty computing platforms or ruggedized lightweight solutions (for example, the light/heavy variants described in Section 4.3), while others may offer a broader range (for example, encompassing a broader spectrum of services or products than just one section). Responding only to those areas where you possess relevant expertise and present capability will allow for an accurate assessment of the current state of the market and identification of the most suitable partners for each category of HaaS support. Please clearly indicate at the beginning of your response which sections of this RFI your submission addresses.

2. Problem Statement

PM MAGTF C2 relies on a complex suite of C2 hardware to maintain operational effectiveness. The current acquisition processes utilize various product support strategies that focus on ensuring delivered capabilities are supported with efficient and effective support mechanisms for both commercial and government provided systems. These product strategies span both field level and depot level maintenance capabilities which have proven to be difficult in maintaining high operational readiness when dealing specifically with commercial (COTS /GOTS components, equipment, and capabilities. The

Marine Corps' current acquisition and fielding processes for COTS hardware lack the responsiveness and flexibility required to keep pace with rapidly evolving user mission requirements and technological advancements. The rigid procedures across several Marine Corps regulations and policies fail to adapt to the dynamic nature of modern warfare and technological innovation, resulting in a significant mismatch between the Marine Corps' operational needs and the capabilities of the systems it deploys. The current processes often lead to the procurement of outdated equipment that is approaching obsolescence before it reaches the end-user, wasting resources and potentially compromising mission effectiveness. Consequently, there is an urgent need to develop a more agile and adaptive acquisition, fielding, and sustainment process for COTS/GOTS equipment, that can quickly respond to mission requirements and technological improvements, ensuring that the Marine Corps remains at the forefront of military capability and operational readiness.

3. Description of Need

MAGTF C2 delivers capabilities that include COTS/GOTS hardware only, software only, or combined SW/HW based on project type to support C2 requirements in Marine Corps operational units as well as supporting establishments (associated schoolhouses and training centers). The software is a mix of customized C2 software, Government Off the Shelf (GOTS) software, and commercially licensed enterprise software, including virtualization infrastructure. PM MAGTF C2 also provides computing capabilities – CPU, memory, and storage – to support operations in various environments including DDIL environments. PM MAGTF C2 is challenged by time-consuming and restrictive Marine Corps processes that severely impede our ability to provide the most up-to-date computing capabilities for our customers and to be responsive to changing demands, such as extensive market research and or test and evaluation. PM MAGTF C2 needs a solution to provide not only initial deployment of computing capabilities but ongoing sustainment and tech refresh of those capabilities.

4. Background

4.1. Current State: PM MAGTF C2 fields operational mission command capability to the U.S. Marine Corps. PM MAGTF C2 currently meets objectives through the fielding of multiple distinct products: warfighting applications (WFA), enterprise/common software services, virtualization infrastructure, and tactical server hardware. While units own their products once they are fielded, PM MAGTF C2 remains the lifecycle manager of these products.

4.2. These products are fielded to units across the USMC, each with their own unique mission sets. Alignment of specific software and hardware to each unit's needs requires a rigorous process that results in a basis of issue (BOI) for each unit.

4.3. PM MAGTF C2 currently manages several hardware suites across several programs within its portfolio. Some hardware families have sub-variants that provide various levels of size, weight, power, and compute (SWAP-C) capability. Further, PM MAGTF C2 fields software capability, along with a host of other WFA, to units with various roles. Below are the rollups of current software resource utilization at the "Light" and "Heavy" levels.

For the projects considered "Light"

- Min: 12 Cores(processor)
 - Base Per Core Processing 2 GHZ
 - Overclocked Per Core Processing 3 GHZ
 - Total Base Processing 20 GHZ
- Min: 128 GB RAM (memory)
- Min: 12 TB (storage)

For the projects considered "Heavy"

- Min: 64 Cores (processor)
 - Base Per Core Processing 2 GHZ
 - Overclocked Per Core Processing 3.7 GHZ
 - Total Base Processing 128 GHZ
- Min: 256 GB RAM (memory)
- Min: 34 TB (storage)

4.4 Responsive modernization of COTS hardware is hampered by three main challenge areas:

4.4.1 **Challenge 1: Rapid Obsolescence and Lengthy Approval Cycles**

A significant challenge lies in the ability for the Program Office to rapidly identify, approve, and field suitable COTS/GOTS equipment (routers, switches, servers, laptops, associated firmware and software) to meet evolving mission requirements. This challenge encompasses both initial procurement and subsequent technical refreshes throughout the

equipment lifecycle. We are looking for assistance in meeting HW and SW requirements more rapidly by having insight on proven and tested commercial products.

The current approval process, including testing and certification IAW the PM MAGTF C2 Test & Evaluation Master Plan, Systems Engineering Plan, and Configuration Management Plan, MILSTD 810H, as well as Materiel Fielding Decisions and Software Delivery/Release approvals, is designed to ensure that new capabilities are functional, capable, maintainable, sustainable, usable, and safe. However, the extensive nature of these evaluations, coupled with the rapid obsolescence cycles characteristic of COTS/GOTS equipment and the constant threat of Diminishing Manufacturing Sources and Material Shortages (DMSMS), creates a significant bottleneck. PM MAGTF C2 is looking for best commercial practices or approaches that vendors may offer in assisting to reduce the time it takes to identify, procure, and deliver COTS/GOTS HW and SW to the Fleet Marine Force.

Specifically, the timeline for hardware identification, testing, and certification can often take upwards of 9-12 months *per iteration*. This protracted process ensures that a significant portion of the accepted solution's useful lifespan is expended *before* procurement even commences, rendering the deployed capability potentially outdated or nearing its end-of-life before it can be fully utilized.

4.4.2 Challenge 2: Streamlining Materiel Fielding and Training Requirements

The Marine Corps Total Package Fielding (TPF) process, as defined in the Marine Corps Systems Command Materiel Fielding Process guidebook, presents a significant challenge in terms of time and resource allocation. This process mandates comprehensive documentation, planning, and prioritization activities to execute the fielding of new systems and capabilities, as well as Modified Instructions (MIs) in support of Engineering Change Proposals (ECPs) related to system refreshes (as defined in the PM MAGTF C2 CMP). The prioritization of fielding and training activities is determined by the Capabilities Directorate and outlined in the respective Materiel Fielding Plan.

A critical component of the TPF process is the development and delivery of training to new users in conjunction with the fielding of both hardware and software. Currently, the Marine Corps often relies on third-party vendors or Product Support Integrators (PSIs) to develop and conduct all associated training. This training development effort *cannot* typically commence until a specific vendor and product have been selected, tested, and approved, further extending the overall deployment timeline.

This sequential approach creates a significant bottleneck, as training development cannot begin until late in the acquisition cycle. This delays the fielding of the capability and can

result in Marines receiving training that is not fully aligned with the deployed system or that is delivered too late to be effective.

4.4.3 Challenge 3: Sustaining Deployed COTS/GOTS Equipment Capabilities

The long-term product support and sustainment of COTS/GOTS equipment (routers, switches, servers, laptops, associated firmware and software) presents a significant challenge once these capabilities are deployed to the field. Ensuring continuous availability, reliability, and security of these systems requires a robust maintenance and support infrastructure, which can be complex and costly to maintain, especially across diverse and geographically dispersed operating environments.

The Marine Corps' maintenance management policy dictates specific requirements for both field-level (organizational) and depot-level maintenance, encompassing activities such as preventive maintenance, corrective maintenance, software updates, security patching, and component replacement. Maintaining these COTS/GOTS systems involves supporting a wide range of assets, including training systems, deployed operational systems, and other associated infrastructure. This often entails managing obsolescence, procuring spare parts, providing technical assistance, and coordinating with multiple vendors.

The current approach to supporting COTS/GOTS systems can be resource-intensive, requiring dedicated personnel, specialized equipment, and complex logistics chains. Furthermore, the rapidly evolving nature of COTS IT technology necessitates ongoing training and adaptation to new maintenance procedures and tools.

5. Response Format

This is an RFI asking for industry ideas on how HaaS may benefit PM MAGTF C2's ability to procure, deliver, maintain, and sustain highly reliable COTS/GOTS equipment and capabilities. We are seeking information describing a HaaS strategy including proposed technical solutions you would use to provide services to meet the needs and challenges described above in the format described below.

Responses should be submitted electronically and be no longer than fifteen (15) pages, including supporting documentation. All should be submitted by 1400 no later than 60 days of the posting this RFI, via e-mail to Joseph Newton at joseph.s.newton@usmc.mil and Bryan Keys at bryan.keys@usmc.mil. The RFI # needs to be in the subject line of the email.

First four (4) pages should provide your service approach. Please explain your high-level approach to providing hardware as a service. In your approach, please provide information pertaining to:

- Cost models you would utilize (e.g., consumption vs flat rate)
 - Consumption estimate models
 - Continuity of operations service model
- Edge hardware
 - Ownership model
 - Hardware selection
 - Service failure resolution
- Software infrastructure service model
 - Government provided vs service provided
 - Interoperability
- Field / Theater Support
 - Garrison support
 - Operations support
- Authority to Operate (ATO)- Validate cybersecurity posture and compliance consistently
- Tech Refresh Cycle Planning and Triggers
- Testing in a representative operational environment
- Manage risk across multiple software baselines and new releases
- Additional Concerns
- What other areas should PM MAGTF C2 consider?

Remainder of response is open to additional details on your proposed solutions, implementations, and past performance.

6. Required Responses and Capability Requirements

6.1.1 Response 1: Rapid Obsolescence and Lengthy Approval Cycles

We are seeking information from industry partners on how Hardware-as-a-Service (HaaS) solutions can address the challenges of rapid obsolescence and lengthy approval cycles. Specifically, we are interested in:

- **Proactive Obsolescence Management:** How can HaaS models proactively mitigate the impact of obsolescence through lifecycle management strategies, technology refresh programs, or alternative sourcing approaches?

- **Streamlined Certification Processes:** Can HaaS providers leverage pre-certified solutions (DoDIN Approved Products List), modular architectures, or other techniques to expedite the testing and certification process, reducing the overall approval timeline?
- **Continuous Security Validation:** How can HaaS models support continuous security validation and compliance throughout the equipment lifecycle, minimizing the need for periodic recertification?
- **Flexible Technology Refresh:** How can HaaS models enable more frequent and seamless technology refreshes without requiring extensive re-evaluation and recertification processes?
- **Management of DMSMS:** How does your HaaS solution address the risk of components in the bill of materials becoming obsolete or unavailable due to DMSMS?

6.1.2 Response 2: Streamlining Materiel Fielding and Training Requirements

We are seeking information from industry partners on how Hardware-as-a-Service (HaaS) solutions can streamline the Materiel Fielding process and address the challenges associated with training development and delivery. Specifically, we are interested in:

- **Accelerated Training Development:** How can HaaS models facilitate accelerated training development using pre-developed training materials, modular training programs, or simulation-based training approaches?
- **Integrated Training Solutions:** Can HaaS providers offer integrated training solutions that are seamlessly aligned with the deployed hardware and software, reducing the need for reliance on third-party vendors or PSIs?
- **"Train-as-You-Go" Capabilities:** How can HaaS models support "train-as-you-go" capabilities, enabling Marines to learn and adapt to new technologies through embedded training tools, online resources, or remote support services?
- **Training Updates and Maintenance:** How does the HaaS solution enable updates to training materials to accommodate technology refreshes and reduce sustainment costs through shared data and a unified management system?
- **Early Involvement in Training:** How could the HaaS provider be involved earlier in the acquisition process to develop training concurrently with system testing and approval?"

6.1.3 Response 3: Sustaining Deployed COTS/GOTS Equipment

We are seeking information from industry partners on how Hardware-as-a-Service (HaaS) solutions can streamline and enhance the product support and sustainment of COTS/GOTS equipment, aligning with the Marine Corps' maintenance management policy. Specifically, we are interested in:

- **Predictive Maintenance Capabilities:** How can HaaS models leverage predictive analytics, remote monitoring, and other technologies to proactively identify and address potential equipment failures before they impact operations?
- **Automated Patching and Updates:** How can HaaS providers automate the delivery and installation of security patches, software updates, and firmware upgrades, ensuring that deployed systems are always up-to-date and protected against vulnerabilities? How will providers test and validate prior to delivery?
- **Remote Troubleshooting and Support:** What remote troubleshooting and support capabilities can HaaS providers offer, enabling rapid resolution of technical issues without requiring on-site personnel?
- **Logistics and Spare Parts Management:** How can HaaS models streamline logistics and spare parts management, ensuring timely availability of critical components while minimizing inventory costs?
- **Depot-Level Maintenance and Repair:** How can HaaS providers support depot-level maintenance and repair requirements, including component overhauls, system upgrades, and end-of-life management?
- **Lifecycle Management and Technology Refresh:** How does the HaaS solution handle equipment end of life, and the technology refresh process to ensure continued capability and security?"
- **Integration with Existing Maintenance Systems:** How does the HaaS solution integrate with existing USMC maintenance management systems (e.g., GCSS-MC)?

6.1.4 Response 4: Technical Capabilities

When providing details on your proposed solution, please consider the following capability needs:

- **How will end users (Marines) interact with your proposed solution (hardware and / or software)?**
 - Automation
 - Documentation
 - Monitoring and dashboards
 - Service and data management

- **How will the Marines be able to customize or tailor their delivered solution to meet their specific business or mission needs?**
 - Scalability to meet demand
 - Integration with existing unit-owned hardware
 - Integration with unit-leased cloud instances
 - Unit-level software deployments
- **How will you ensure service availability in contested environments?**
 - Performance
 - Sparing
 - Corrective Maintenance and integration into Marine Corps RMA process
 - Disaster relief
 - Data security
 - Regulatory compliance
- **How will your solution be implemented and sustained?**
 - Supplemental Training Materials (Technical Manuals, Quick Reference Guides, etc.)
 - Training Execution (Synchronous or Asynchronous)
 - Fielding / Distribution
 - Property Accountability via recognized Program of Record (POR)
 - Help Desk and/or Field Support
 - Maintenance, Repair, Returns and Replacement
 - Regional Field Service Representative

6.2 Key requirements include high availability, robust performance, seamless integration with existing C2 systems, and flexible pricing models that align with our hardware and software needs. Additionally, the solution should include comprehensive management tools, monitoring capabilities, and support for hybrid product support that aligns with current Marine Corps Maintenance policy and processes. Security features, such as encryption, identity management, and compliance certifications are critical to ensure data integrity and adherence to industry standards.

6.3 Vendors should demonstrate technical expertise, reliable support services, and a proven track record in delivering scalable and innovative HaaS solutions. Responses should provide solutions for all phases of real-world Marine Corps unit-level training and operations, including home station, exercises, training environments, and wartime deployments.

6.4 Deployment of physical hardware should present minimized SWAPC as well as providing currency – hardware should be no more than three-to-five years old at any given point in time. Attached is a proposed bill of material for a PM MAGTF C2 Light solution.

7. Operational Use Cases

These operational use cases are provided as a non-exhaustive list of some of the types of operational needs for which PM MAGTF C2 provides capability.

7.1 General Use Case Requirements

- a. Applications and data must be continuously available for Marine use, independent of external network connectivity or hardware failure.
- b. Solutions must be tailorable to individual units based on mission set and standard operating procedures.

7.2 Unit Exercise / Deployment

7.2.1 Garrison

- a. Unit is in garrison and performs routine operations using warfighting applications. Data products are created and used in day-to-day operations with end-user devices.
- b. Unit is assigned to an exercise that requires mobilizing to another physical location.
- c. Unit prepares to mobilize
 - 1. Unit receives any needed episodic edge hardware, potentially including end-user devices.
 - 2. Applications and data products are available on received equipment.
 - 3. Home station instances of applications and services remain operational.
 - 4. Physical packaging of equipment

7.2.2 Forward Location

- a. Unit travels to the exercise / deployment location with packaged equipment.
- b. Unit unpackages equipment and conducts exercise.
- c. Throughout operations, data products are updated and must also synchronize with home station.
- d. Mission is completed.

7.2.3 Garrison

- a. Unit packages equipment and transitions back to garrison.
- b. Unit migrates applications and data products from received equipment if needed.
- c. Unit returns episodic equipment

1. Declassification
 2. Packaging and return
- d. Unit continues routine home station operations.

7.3 Combat Training Center

- a. Training center staff and instructors perform daily operations of developing and maintaining operational workflows and associated data products in preparation of unit exercises.
- b. Training unit arrives and conducts exercise, which may be destructive to the training environment.
- c. Exercise concludes.
- d. Training center staff reset the training environment in preparation for the next unit exercise.

7.4 Training and Simulation Environments

- a. Host realistic training and simulation environments for commanders and staff.
- b. Enable virtual wargaming, mission rehearsal, and cyber defense exercises.
- c. Leverage cloud-based infrastructure instead of physical training facilities where appropriate.

7.5 Remote Management & Automated Infrastructure Scaling

- a. Unit teams can remotely provision, monitor, and scale infrastructure as mission demands fluctuate.
- b. Reduce the logistical burden of transporting and maintaining physical hardware in deployed environments.