

**Request for Information**  
**Platform Autonomy Modular Mission Payload (MMP)**  
**25 March 2020**

**I. Description of Intent:**

The Army Contracting Command-Detroit Arsenal, in conjunction with Product Manager (PdM), Appliqué and Large Unmanned Ground Systems (ALUGS) are issuing this Market Questionnaire for the UGS Autonomy Modular Mission Payload (MMP) (Autonomy MMP) for use by the U.S. Army.

The objective of the Market Questionnaire is to better understand the availability and capabilities of commercial products and the potential of the associated equipment manufacturers. The information gathered by the Army through this Market Questionnaire, along with other market investigation data, is solely intended for use by the U.S. Army and will not be shared with any company. Participation in this Market Questionnaire provides an important opportunity to influence the Army's approach to procuring the MMP for UGS.

This questionnaire is a Request for Information (RFI) ONLY and is not a solicitation for proposals; therefore, no questions will be taken at this time. A prototype project will not be awarded in response to this request.

If a solicitation for the Autonomy MMP project is issued in the future, it would be issued under the Ground Vehicle Systems Other Transaction Agreement (GVS OTA), W15QKN-17-9-1025. The GVS OTA was awarded to the National Advanced Mobility Consortium (NAMC) under the authority of 10 U.S.C. § 2371b.

The U.S. Government is in no way liable to pay for or reimburse any companies or entities that respond to this announcement. Any costs incurred by interested companies in response to this announcement will NOT be reimbursed.

**RESPONSE TIME:** We thank you in advance, for your time and participation in this Market Questionnaire. **The U.S. Government requires all responses be returned by 3:00 pm, 08 April 2020 to [Proposals@NAMConsortium.org](mailto:Proposals@NAMConsortium.org).**

**II. Instructions:**

- a. Read the capability summary for the Autonomy MMP in Section III of this Market Questionnaire.
- b. Answer all of the questions in the Market Questionnaire in Section IV and spell out any acronyms in their first instance. If certain U.S. Army capabilities identified are deemed not available, or not achievable according to the respondent's company knowledge, please include alternate capabilities which would be intended to provide the intent of the capability described therein. It is the U.S. Army's desire to avoid "not applicable" (N/A) type answers to the maximum extent possible. Please provide yes/no and descriptive responses as appropriate to each question. Please provide supporting rationale, comments and recommendations as appropriate.
- c. Please provide the projected development resources such as cost and timing to support the Autonomy MMP desired capabilities. This information is essential in understanding the

**Request for Information**  
**Platform Autonomy Modular Mission Payload (MMP)**  
**25 March 2020**

scope of the project. It is understood by the U.S. Army that this information is strictly a rough order of magnitude. The respondent's company is not contractually obligated by the provided information. The U.S. Army will use the information strictly as a means for gaining general knowledge. Please include cost and timing estimates for any alternate solutions.

- d. Provide product brochures or other forms of information (i.e. drawings, pictures, videos, etc.) relevant to this Market Questionnaire as is deemed appropriate. Additionally, the respondent is encouraged to provide any additional information that enables the U.S. Army to gain insight into the company, product performance, reliability and warranty performance. Brochures should be provided to substantiate responses in the questionnaire and should not be considered as a substitute.
- e. Clearly and conspicuously mark qualifying data with the restrictive legend (all caps) "PROPRIETARY" with an explanatory text so the U.S. Government is clearly notified of the data needing to be appropriately protected.
- f. In marking such data, please take care to mark only those portions of the data or materials truly proprietary (over breadth in marking inappropriate data as "PROPRIETARY" may diminish or eliminate the usefulness of your response). Use circling, underscoring, highlighting or other appropriate means to indicate the portion of a single page to be protected.
- g. The U.S. Government is not obligated to protect unmarked data. Additionally, marked data which is already in the public domain or in possession of the U.S. Government or 3<sup>rd</sup> parties, or is afterward placed into public domain by the owner or another party through no fault of the U.S. Government will not be protected once it is in the public domain. Data which is already in the possession of the U.S. Government will be protected in accordance with the government's rights in the data.
- h. Proprietary data transmitted electronically, whether by physical media or not, whether by the respondent or by the U.S. Government, will contain the "PROPRIETARY" legend, with any explanatory text on both the cover of the transmittal email and at the beginning of the file itself. Where appropriate for only portions of an electronic file, use the restrictive legends "PROPRIETARY PORTION BEGINS:" and "PROPRIETARY PORTION ENDS."
- i. In any reproductions of technical data or any portions thereof subject to asserted restrictions, the U.S. Government will also reproduce the asserted restriction legend and any explanatory text.
- j. The U.S. Government sometimes uses support contractors in evaluating responses. Consequently, responses which contain proprietary information may receive only limited or no consideration since the respondent's marking of the data as "PROPRIETARY" will preclude disclosure to non U.S. Government employees and therefore will preclude disclosure to these support contractors assisting the evaluation effort. The U.S. Government will use its best efforts to evaluate those responses that contain proprietary information without using support contractors consistent with the resources available.

**Request for Information**  
**Platform Autonomy Modular Mission Payload (MMP)**  
**25 March 2020**

**III. Capability Summary for Autonomy MMP**

The Government is seeking a modular mission payload prototype to enable platform autonomy to lighten the dismounted infantry's physical and cognitive load attained from continuous remote control of an unmanned platform. The capabilities sought through enhanced platform autonomy shall allow the dismounted infantry to reduce the burden of command and control of unmanned ground system and ensure mission success during the operation of the Small-Multipurpose Equipment Transport (S-MET) platform over 60 miles and 72 hours missions, through military significant environments, including unstructured roads, structured roads, open and rolling terrain, and vegetation heavy areas. Government desires a low size, weight, and power (SWaP) solution. The Government will integrate and conduct safety/user evaluation of the autonomy capability on the S-MET platform. These evaluations will inform the production requirements document of the platform autonomy MMP, and also inform performance specifications for this MMP for the S-MET Program of Record.

**IV. MARKET QUESTIONNAIRE:** The market questionnaire consists of two parts, Business Information and Technical Questions.

**PART 1. BUSINESS INFORMATION:** Please provide the following Administrative information as the first section of your submission.

1. Manufacturer

- a. Company Name (and any former names):
- b. Traditional or Non-Traditional Contractor:

\*Non-Traditional Contractor: An entity that is not currently performing and has not performed, for at least the one-year period preceding the solicitation of sources by DoD for the procurement or transaction, any contract or subcontract for the DoD that is subject to full coverage under the cost accounting standards prescribed pursuant to section 1502 of title 41 and the regulations implementing such section (see 10 U.S.C. 2302(9)).

- c. Mailing Address:

2. Personnel Responding to this Survey

- a. Name:
- b. Title:
- c. Company Responsibility/Position:
- d. Telephone/Fax Numbers:
- e. E-mail address:

**Request for Information**  
**Platform Autonomy Modular Mission Payload (MMP)**  
**25 March 2020**

**PART 2. Technical Questions:** Please provide responses to the following Technical Questions:

1. Discuss your companies experience developing platform autonomy and related systems.
2. Discuss the ability of the proposed technologies to support the dismounted Infantry platoon mission within various environments and terrains including any assumptions, benefits, and constraints.
3. Discuss system performance parameters, their definitions, their specific parameter values (specify min/max where applicable and particular conditions/constraints), and how they are relevant for the proposed solution.
4. Does your system provide layers of autonomy to operate in signature friendly as well Global Positioning System and/or signature denied environments, in order to minimize signature of the platform to enemies? Describe mapping, localization, and navigation sensors and technologies.
5. Does your system provides a layered approach to path planning to operate on unstructured roads, structured roads, open and rolling terrain, and vegetation heavy areas? Provide a description of path planners and supported terrains.
6. Does your system provides warning, cautions, and alerts to the operator in all modes of operation, if the system requires soldier intervention to ensure safe operation of the system and mission success?
7. Does your technology provide an independent collision prevention system? Provide a description of system software safety approach. Identify system hazards, software safety critical functions, and the implemented protective measures.
8. Does your system allow an operator to override the emergency collision mitigation in all modes of control?
9. Does your system minimize need for a dedicated operator? Describe how the system reduces cognitive and physical workload on the operator.
10. Discuss physical characteristics of system including volume, weight, envelop of operation, and mounting requirements. Does the system require permanent platform modification which will interfere with the payload carrying capability and capacity (i.e. area, volume, gross vehicle weight) of the S-MET platform while the system is not mounted to the platform?
11. Discuss how your system would integrate to the base platform for the controls. Is it though a defined interface that complies with the IOP By-Wire specs, other open source interface standards, or proprietary standards? The IOP By-Wire specs are available for download from the NAMC Website.
12. Can the system operate using only the power supplied via 28 VDC (1.5 kW/ 3.0 kW) IAW MIL-STD-1275? Specify the power consumption profile for the system.

**Request for Information**  
**Platform Autonomy Modular Mission Payload (MMP)**  
**25 March 2020**

13. Provide a description for how system would use the IOP to standardize the integration onto a platform. What is a rough order of magnitude estimate of the time and cost for IOP based integration? The IOP v3.0 is available for download from NAMC website at <https://www.namconsortium.org>.
14. Does your system utilize Robotic Technology Kernel (RTK)? If not, what is a rough order of magnitude estimate of the time and cost to become compliant? If yes, have you made any modifications to the architecture managed by the U.S. Army Future Command Ground Vehicle Systems Center (previously known as the Tank Automotive Research Development and Engineering Center (TARDEC)). Information for RTK may be requested through Contact support@rosmilitary.org with "RTK 2019 Access" as the subject line. The request will be evaluated by U.S. Army GVSC. If approved, a representative will email the requestor SDA paperwork to be filled out Once the paperwork is complete and verified, users will be required to obtain Di2E Access
15. Identify the acoustic, thermal, infrared, electromagnetic, and other signatures from the proposed system.
  - a. Discuss the system's ability to operate in a passive mode(s), if any
16. Discuss how system is designed to withstand shock and vibrations while mounted to mobile platform in environments which dismounted Infantry typically operate.
17. Is your system available as commercially-off-the-shelf and ready for integration? If not, provide an estimated schedule to produce a single prototype system.
18. Has your system been safety evaluation by Army Test and Evaluation Command? If yes, explain the lessons learned and what changes have been made to improve your system.
19. Will the system be capable of setup/teardown/mount on/off the platform by a single Soldier?
  - a. Are Special tools required?
20. Provide cost estimates for a single prototype system and estimate of unit cost if the proposed system were to enter production under a future Program of Record.

**PART 3. Additional Information:** The following platform information is provided to support design considerations of the proposed solution.

1. The Government will provide a Government Furnished Equipment (GFE) S-MET to the contractor for use in the case of a project award.
2. The Autonomy MMP contractor will work with S-MET integration lead to integrate the capability onto the platform.
3. The Government has not down selected an S-MET platform for the Program of Record. The Autonomy MMP provider should propose a solution that is to be integrated on to one of the

**Request for Information**  
**Platform Autonomy Modular Mission Payload (MMP)**  
**25 March 2020**

platforms described below upon completion of the OTA Project which may follow this RFI. The actual platform used for this effort will be determined by the timing of a Request for Prototype proposals release and an award being made.

- a. Platform A
  - i. Platform (L x W x H): 116 in x 66 in x 42 in
  - ii. Bed (L x W x H): 102 x 59 x N/A in
  - iii. Curb/Gross/Cargo (lbs): 2650, 3850, 1000 Plus
  - iv. Auxiliary Power: NATO slave interface, and 28 VDC (1.5 kW/ 3.0 kW) IAW MIL-STD-1275
  
- b. Platform B
  - i. Platform (L x W x H): 96 in x 55 in x 47 in
  - ii. Bed (L x W x H): 62 x 54 x N/A in
  - iii. Curb/Gross/Cargo (lbs): 3600, 4600, 1000 Plus
  - iv. Auxiliary Power: NATO slave interface, and 28 VDC (1.5 kW/ 3.0 kW) IAW MIL-STD-1275
  
- c. Platform C
  - i. Platform (L x W x H): 100 in x 59 in x 45 in
  - ii. Bed (L x W x H): 65 x 56 x N/A in
  - iii. Curb/Gross/Cargo (lbs): 2600, 3600, 1000 Plus
  - iv. Auxiliary Power: NATO slave interface, and 28 VDC (1.5 kW/ 3.0 kW) IAW MIL-STD-1275