

## MOTORCYCLE TECHNOLOGY EVALUATION CHALLENGE (MOTOTEC)

### STATEMENT OF WORK FOR VENDOR

The objective of the Motorcycle Technology Evaluation Challenge (MotoTEC) is to improve the safety and overall experience for motorcyclists on the road. The evaluation and deployment of advanced motorcycle technology will be a key to realizing this objective.

The primary role of the Virginia Tech Transportation Institute (VTTI) is to serve as an independent evaluator of the *system-of-interest's* functional capabilities, effectiveness, and rider acceptance. In doing so, VTTI will develop the testing protocols, unobtrusively capture the data necessary to assess the *system-of-interest's* operational performance, analyze the data to answer research questions, and report the findings.

VTTI is seeking technology vendors who are capable of performing the tasks outlined in this statement of work (SOW). Capable technology vendors should submit a brief, three-page proposal on how they will address the SOW tasks. Proposals and questions should be sent to [mototec@vtti.vt.edu](mailto:mototec@vtti.vt.edu). Vendors are encouraged to submit proposals on an ongoing basis, and they will be placed in a pipeline of promising projects under continuous consideration. The proposals VTTI receives in response to this announcement will be ranked using many different factors such as ease of use and potential safety benefits. The final selection will be made by a steering committee made up of many key stakeholders in the motorcycle industry.

The primary role of the selected technology vendor, (“*vendor*”), will be to perform typical tasks associated with the marketing, installation, and operation of the motorcycle technology, (“*system-of-interest*”). Please note that the *vendor* will be responsible for providing, at no cost, as many systems needed to conduct the evaluation and will receive no payment for the vendor’s involvement in the evaluation.

The remainder of the SOW describes the *vendor's* tasks necessary to support VTTI. It is recommended that the vendor indicate in their proposal any past operational evaluations of the *system-of-interest* that have been completed and any findings that can be shared.

#### **Task V1: Develop Test Plan**

In Task V1, the *vendor* shall assist VTTI in developing a test plan that will provide the roadmap for conducting the project. The *technology vendor's* assistance will be limited to providing VTTI details about the *system-of-interest's* functionality (e.g., How does the system interact with the motorcycle and the motorcycle’s electrical systems?), possible hypotheses highlighting the benefits of the system, important factors to consider in the research design (e.g., How is it installed? Does it collect any data?), and performance measures of interest. **The *vendor* shall provide a response within one week of VTTI’s written request for support.**

#### **Task V2: Begin Study Preparatory Work**

When necessary and required, the vendor shall work with VTTI to develop the needed connections between the *system-of-interest* and VTTI’s data acquisition system (DAS) for data collection purposes. This task may not be applicable to all proposers. If applicable, the proposal should detail the activation signal and information that can be conveyed to the DAS and by what possible means. **The vendor shall provide a response within one week of VTTI’s written request for support for Task V2.**

#### **Task V3: Installation of System-of-Interest and VTTI DAS**

VTTI will conduct an independent evaluation of the *system-of-interest* per the research plan developed in Task V1. VTTI will install its proprietary DAS and provide on-site maintenance and data downloads. **The vendor shall work with VTTI, as requested, to ensure all connections between system-of-interest and VTTI's proprietary DAS is functional throughout the testing.**

In Task V3, the *vendor* shall properly install the *system-of-interest* and, when necessary, train the personnel on the *system-of-interest* functionality. Installation of the safety technology will be performed by the *vendor's* staff, or the *vendor* has the option of VTTI personnel to perform the installation on the *vendor's* behalf. In either case, the *vendor* must certify the installation of the *system-of-interest* is road-ready, fully integrated with the motorcycle's current systems, and operating as designed. Important considerations should include: time required for installation, necessary alterations to the motorcycle, etc. As confirmed in the SOW, VTTI (as an independent evaluator) will have limited interaction with the *system-of-interest* so as to not influence the performance of the system. VTTI's primary role is to monitor the progress of the *vendor* to ensure that the *system-of-interest* is installed in a timely manner. On-site maintenance and data downloads from the *system-of-interest* will also be conducted by the *vendor* and/or on-site personnel. Though not directly involved, VTTI will monitor progress of Task V3 to ensure that the work is carried out as per the research plan. For the purpose of costing this task, the *vendor* shall assume that there will be no funds provided to the *vendor* for providing the needed *systems-of-interest*, installation, and motorcycles/drivers. **The vendor shall provide a response within one week of VTTI's written request for support for Task V3.**

#### **Task V4: Brief Riders**

In Task V4, just prior to the start of data collection, the riders will be given a briefing regarding the study and, as necessary, presented with a Virginia Tech Institutional Review Board-approved Informed Consent form to sign. The *vendor* will collaborate with VTTI staff to ensure accurate information regarding the system functionality is being presented. The *vendor* should convey its willingness to review rider training/briefing materials to ensure that accurate system functionality is provided by VTTI. **The vendor shall provide a response within one week of VTTI's written request for support for Task V4.**

#### **Task V5: Collect On-Road Data and Data Transfer**

It is planned that each rider will operate an instrumented motorcycle for one to three months (if relevant for the *system-of-interest*). The *vendor* will be responsible for any repairs or maintenance of the *system-of-interest* during the data collection period. On a weekly basis, any relevant data that is collected independently by the *system-of-interest* and not provided to VTTI's DAS shall be sent by the *vendor* via email (aschautd@vti.vt.edu) to VTTI. The *vendor* shall ensure proper data transfers and reliability/validity of the *system-of-interest* data. This task may not be applicable to all proposers. For those *systems-of-interest* that collect data, the proposal should detail what information is collected by the *system-of-interest* and how the *vendor* intends to convey that data to VTTI on a weekly basis. **Task V5 will be completed by the vendor within two months after data collection commences.**

#### **Task V6: Removal of Safety Technology**

Upon the completion of data collection, the *vendor* shall be responsible for the removal of the *system-of-interest*. Important considerations could include: time required for removal, how the *vendor* will ensure that the motorcycle is returned to its original condition, and how the *vendor* will remedy any owner concerns about the installation/removal of the *system-of-interest*. **Task V4 will be completed by the vendor within one month after data collection (Task V5) ends.**

#### **BENEFITS TO VENDOR**

There is no budget allocated for the *vendor* to participate in this study. However, there are several intangible benefits that the *vendor* will gain from participating:

*This SOW serves as guide for submitting vendor proposals (details subject to change based on already in-progress technology evaluation)*

(1) Potential access to VTTI's research capabilities. As a test case, researchers will assess the vendor's technology who will then provide valuable insight to the efficacy of the vendor's product. As such, participation in the study provides the vendor with an opportunity to work directly with these researchers on a trial basis.

(2) In addition, the selected vendor will receive access to a well-established network of prominent committee members who help to shape the motorcycle industry.