



Request for Proposal #648254

for

Onboard Monitoring System For Commercial Vehicles  
Field Operational Study Assistance

September 16, 2008

RFP 648254  
GENERAL INFORMATION FORM

**QUESTIONS:** All inquiries for information regarding this solicitation should be directed to: John D. Krallman, Phone: (540) 231-9471, e-mail: john.krallman@vt.edu.

**DUE DATE:** Sealed Proposals will be received until October 17, 2008 at 3:00 PM. Failure to submit proposals to the correct location by the designated date and hour will result in disqualification.

**ADDRESS:** Proposals should be mailed or hand delivered to: Virginia Polytechnic Institute And State University (Virginia Tech), Information Technology Acquisitions, 1700 Pratt Dr (0214), Blacksburg, Virginia 24061. Reference the Opening Date and Hour, and RFP Number in the lower left corner of the return envelope or package.

In compliance with this Request For Proposal and to all the conditions imposed therein and hereby incorporated by reference, the undersigned offers and agrees to furnish the goods and services in accordance with the attached signed proposal and as mutually agreed upon by subsequent negotiation.

**PRE-PROPOSAL CONFERENCE:** See Section VIII for information regarding a pre-proposal conference.

**TYPE OF BUSINESS:** (Please check all applicable classifications). If your classification is certified by the Virginia Department of Minority Business Enterprise, provide your certification number: \_\_\_\_\_. For certification assistance, please visit: <http://www.dmb.state.va.us/swamcert.html>.

- \_\_\_ **Large**
- \_\_\_ **Small business** – An independently owned and operated business which, together with affiliates, has 250 or fewer employees or average annual gross receipts of \$10 million or less averaged over the previous three years. Department of Minority Business Enterprise (DMBE) certified women-owned and minority-owned business shall also be considered small business when they have received DMBE small business certification.
- \_\_\_ **Women-owned business** – A business concern that is at least 51% owned by one or more women who are U. S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51% of the equity ownership interest is owned by one or more women who are citizens of the United States or non-citizens who are in full compliance with the United States immigration law, and both the management and daily business operations are controlled by one or more women who are U. S. citizens or legal resident aliens.
- \_\_\_ **Minority-owned business** – A business concern that is at least 51% owned by one or more minority individuals (see Section 2.2-1401, Code of Virginia) or in the case of a corporation, partnership, or limited liability company or other entity, at least 51% of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more minority individuals and both the management and daily business operations are controlled by one or more minority individuals.

**COMPANY INFORMATION/SIGNATURE:** In compliance with this Request For Proposal and to all the conditions imposed therein and hereby incorporated by reference, the undersigned offers and agrees to furnish the goods and services in accordance with the attached signed proposal and as mutually agreed upon by subsequent negotiation.

FULL LEGAL NAME (PRINT) <small>(Company name as it appears with your Federal Taxpayer Number)</small>		FEDERAL TAXPAYER NUMBER (ID#)	
BUSINESS NAME/DBA NAME/TA NAME <small>(If different than the Full Legal Name)</small>		FEDERAL TAXPAYER NUMBER <small>(If different than ID# above)</small>	
BILLING NAME <small>(Company name as it appears on your invoice)</small>		FEDERAL TAXPAYER NUMBER <small>(If different than ID# above)</small>	
PURCHASE ORDER ADDRESS		PAYMENT ADDRESS	
CONTACT NAME/TITLE (PRINT)		SIGNATURE (IN INK)	DATE
E-MAIL ADDRESS	TELEPHONE NUMBER	TOLL FREE TELEPHONE NUMBER	FAX NUMBER TO RECEIVE E-PROCUREMENT ORDERS

08/08

## I. PURPOSE:

The purpose of this Request for Proposal (RFP) is to solicit sealed proposals to establish a contract through competitive negotiations for a Technology Vendor to support a planned Federal Motor Carrier Safety Administration (FMCSA)-funded study to evaluate the safety benefits of an onboard behavior monitoring system (OBMS) for commercial motor vehicle operations by Virginia Polytechnic Institute and State University (Virginia Tech), an agency of the Commonwealth of Virginia.

## II. CONTRACT PERIOD:

The term of this contract is for up to three year(s), or as negotiated.

## III. BACKGROUND:

The Virginia Tech Transportation Institute (VTTI) is seeking a Technology Vendor that can provide an OBMS program capable of on-board monitoring, recording and reporting of safety critical events, followed by coaching by fleet safety managers. More specifically, the Technology Vendor must provide a high fidelity OBMS and the carrier fleets to answer the following study objectives:

- A. Does individual driving performance improve over time with OBMS feedback?
- B. How does the OBMS and feedback program improve safety?
- C. How do the driver's opinions and attitudes towards the OBMS system and program change over time?
- D. What are the fleet safety manager's opinions and attitudes about the OBMS system?
- E. What is the business case for implementing an OBMS program?

In addition, VTTI requires that any system provided under this contract include the collection of continuous, naturalistic data from the study fleets to support future data analysis efforts that are beyond the scope of this contract. These continuous data will be archived at VTTI for future use.

## IV. EVA BUSINESS-TO-GOVERNMENT ELECTRONIC PROCUREMENT SYSTEM:

The eVA Internet electronic procurement solution streamlines and automates government purchasing activities within the Commonwealth of Virginia. Virginia Tech, and other state agencies and institutions, have been directed by the Governor to maximize the use of this system in the procurement of goods and services. *We are, therefore, requesting that your firm register as a trading partner within the eVA system.*

There are registration fees and transaction fees involved with the use of eVA. These fees must be considered in the provision of quotes, bids and price proposals offered to Virginia Tech. Failure to register within the eVA system may result in the quote, bid or proposal from your firm being rejected and the award made to another Technology Vendor who is registered in the eVA system.

Registration in the eVA system is accomplished on-line. Your firm must provide the necessary information. Please visit the eVA website portal at [http://www.eva.virginia.gov/register/Technology\\_Vendorreg.htm](http://www.eva.virginia.gov/register/Technology_Vendorreg.htm) and **register both with eVA and Ariba**. *This process needs to be completed before Virginia Tech can issue your firm a Purchase Order or contract.* If your firm conducts business from multiple geographic locations, please register these locations in your initial registration.

For registration and technical assistance, reference the eVA website noted above, send e-mail to: [eVACustomerCare@dgs.virginia.gov](mailto:eVACustomerCare@dgs.virginia.gov), or call 866-289-7367 or 804-371-2525.

## V. STATEMENT OF NEEDS:

### A. Overview:

The Virginia Tech Transportation Institute is currently seeking a Technology Vendor to support a planned Federal Motor Carrier Safety Administration (FMCSA) funded study to evaluate the safety benefits of an onboard behavior monitoring system (OBMS) for commercial motor vehicle operations. The OBMS envisioned will integrate driver behavior monitoring, forward collision warning, roadway departure warning, and naturalistic continuous data collection. It must

also use in-vehicle video technology, collect data from sensors, and have an integrated Driver Vehicle Interface. The OBMS must use driving performance management software, and have in place a program for driver counseling, the goal of which is to improve safety and reduce the cost of poor driving. This study will assess the efficacy of the selected Technology Vendor's system/program and determine the improvements to driving safety (through improved driver performance) in commercial vehicle operations. Please note the selected Technology Vendor will be responsible for providing 250 systems and collecting data for 12 months. Two datasets will be required from this study: (i) data from the OBMS used to coach drivers and (ii) continuous data collection (data recorded when the vehicle is on and in motion).

B. OBMS features desired:

The selected Technology Vendor must provide an OBSM program that can address the required functionality outlined in Appendix C. The selected Technology Vendor must also be capable of completing all Technology Vendor tasks noted in Appendix D.

C. Delivery: - Technology Vendor must be prepared to deliver all services upon contract award.

VI. PROPOSAL PREPARATION AND SUBMISSION:

A. General Requirements

1. RFP Response: In order to be considered for selection, Offerors must submit a complete response to this RFP. The proposal shall be submitted in both print and electronic media as follows: **One (1) printed original, four (4) printed copies, and one (1) electronic media copy in a generally used format(s) on CD or DVD media**, with delivery to:

Virginia Tech  
Information Technology Acquisitions (0214)  
1700 Pratt Drive  
Blacksburg, VA 24061

**Reference the Opening Date and Hour, and RFP Number in the lower left hand corner of the return envelope or package.**

No other distribution of the proposals shall be made by the Offeror.

2. Proposal Preparation

- a. Proposals shall be signed by an authorized representative of the Offeror. All information requested should be submitted. Failure to submit all information requested may result in Virginia Tech requiring prompt submission of missing information and/or giving a lowered evaluation of the proposal. Proposals which are substantially incomplete or lack key information may be rejected by Virginia Tech at its discretion. Mandatory requirements are those required by law or regulation or are such that they cannot be waived and are not subject to negotiation.
- b. Proposals should be prepared simply and economically providing a straightforward, concise description of capabilities to satisfy the requirements of the RFP. Emphasis should be on completeness and clarity of content.
- c. Proposals should be organized in the order in which the requirements are presented in the RFP. All pages of the proposal should be numbered. Each paragraph in the proposal should reference the paragraph number of the corresponding section of the RFP. It is also helpful to cite the paragraph number, subletter, and repeat the text of the requirement as it appears in the RFP. If a response covers more than one page, the paragraph number and subletter should be repeated at the top of the next page. The proposal should contain a table of contents which cross references the RFP requirements. Information which the offeror desires to present that does not fall within any of the requirements of the RFP should be inserted at an appropriate place or be attached at the end of the proposal and designated as additional material. Proposals

that are not organized in this manner risk elimination from consideration if the evaluators are unable to find where the RFP requirements are specifically addressed.

- d. Each copy of the proposal should be bound in a single volume where practical. All documentation submitted with the proposal should be bound in that single volume.
  - e. Ownership of all data, material and documentation originated and prepared for Virginia Tech pursuant to the RFP shall belong exclusively to Virginia Tech and be subject to public inspection in accordance with the Virginia Freedom of Information Act. Trade secrets or proprietary information submitted by an Offeror shall not be subject to public disclosure under the Virginia Freedom of Information Act. However, to prevent disclosure the Offeror must invoke the protections of Section 2.2-4342F of the Code of Virginia, in writing, either before or at the time the data or other materials is submitted. The written request must specifically identify the data or other materials to be protected and state the reasons why protection is necessary. The proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining and must indicate only the specific words, figures, or paragraphs that constitute trade secret or proprietary information. The classification of an entire proposal document, line item prices and/or total proposal prices as proprietary or trade secrets is not acceptable and may result in rejection of the proposal.
3. Oral Presentation: Offerors who submit a proposal in response to this RFP may be required to give an oral presentation of their proposal to Virginia Tech. This will provide an opportunity for the Offeror to clarify or elaborate on the proposal but will in no way change the original proposal. Virginia Tech will schedule the time and location of these presentations. Oral presentations are an option of Virginia Tech and may not be conducted. Therefore, proposals should be complete.

#### B. Specific Requirements

Proposals should be as thorough and detailed as possible so that Virginia Tech may properly evaluate your capabilities to provide the required goods and services. Offerors are required to submit the following information/items as a complete proposal:

1. The return of the General Information Form and addenda, if any, signed and filled out as required.
2. Four (4) recent references, either educational or governmental, for whom you have provided the type of goods and services described herein. Include the date(s) they were furnished, the client name, address and the name and phone number of the individual Virginia Tech has your permission to contact.
3. Suitability for the OBSM program - Please indicate how you will address the tasks associated with the Technology Vendor outlined in Appendix D.
4. Price - Provide complete pricing for the OBMS program and Field Operational Test Data Collection as described in this document.
5. Data collection - Two datasets will be required from this study: (i) data from the OBMS used to coach drivers and (ii) continuous data collection (data recorded when the vehicle is on and in motion). Provide details on the ability of your OBMS to provide these two datasets as outlined in Appendix C. Be specific as to whether and how your system will address each requirement noted. Please note the selected Technology Vendor will be responsible for providing 250 systems and collecting data for 12 months.
6. Ease of use/reliability - Describe the ease of performing routine maintenance as well as the reliability of the data collection equipment. A reliable, highly capable system is critical as data collection will occur while drivers make their normal, revenue-producing deliveries.
7. Small, Women-owned and Minority-owned Business (SWAM) Utilization: - If your business can not be classified as Small, Women-owned, or Minority-owned, describe your plan for utilizing SWAM businesses if awarded a contract. Describe your ability to provide statistical reporting on actual SWAM subcontracting when

requested. If your firm or any business that you plan to subcontract with can be classified as SWAM, but has not been certified by the Virginia Department of Minority Business Enterprise, it is expected that the certification process will be initiated no later than the time of the award.

VII. SELECTION CRITERIA AND AWARD:

A. Selection Criteria

Proposals will be evaluated by Virginia Tech using the following:

<u>Criteria</u>	<u>Maximum Point Value</u>
1. Suitability for the OBMS Program	
2. Price	
3. Data Collection capabilities	
4. Ease of Use/Reliability	
5. SWAM Utilization	
	<hr/>
	Total 100

B. Award

Selection shall be made of two or more offerors deemed to be fully qualified and best suited among those submitting proposals on the basis of the evaluation factors included in the Request for Proposal, including price, if so stated in the Request for Proposal. Negotiations shall then be conducted with the offerors so selected. Price shall be considered, but need not be the sole determining factor. After negotiations have been conducted with each offeror so selected, Virginia Tech shall select the offeror which, in its opinion, has made the best proposal, and shall award the contract to that offeror. Virginia Tech may cancel this Request for Proposal or reject proposals at any time prior to an award. Should Virginia Tech determine in writing and in its sole discretion that only one offeror has made the best proposal, a contract may be negotiated and awarded to that offeror. The award document will be a contract incorporating by reference all the requirements, terms and conditions of this solicitation and the Contractor's proposal as negotiated. See Attachment B for sample contract form.

VIII. OPTIONAL PRE-PROPOSAL CONFERENCE:

An optional pre-proposal conference will be held on Monday, September 29, 2008 at 3:30 P.M. Eastern time in Room #115, Research Building #14, Corporate Research Center, 1770 Forecast Drive, Blacksburg, VA. The purpose of this conference is to allow potential Offerors an opportunity to present questions and obtain clarification relative to any facet of this solicitation.

While attendance at this conference will not be a prerequisite to submitting a proposal, offerors who intend to submit a proposal are encouraged to attend.

Bring a copy of this solicitation with you. Any changes resulting from this conference will be issued in a written addendum to this solicitation.

**It is strongly recommended that you obtain a visitor parking permit for display on your vehicle prior to attending the conference. Visitor parking permits are available from the Visitor Information Center located on Southgate Drive, phone: (540) 231-3548 or from the Parking Services Department located at 455 Tech Center Drive, phone: (540) 231-3200.**

We will offer a choice of **in-person or pre-arranged teleconference attendance** for the optional pre-proposal conference. All teleconference attendance requires advance arrangements, deadline September 25, 2008, 3:00 pm Eastern time. See **Attendance** section below.

The format of the conference is to summarize background and procedural information, ask if there are follow-up questions to the Questions & Answers documents already posted to our department website ([www.ita.vt.edu](http://www.ita.vt.edu)), receive any new questions, and close. Note that we do not plan to provide answers to questions immediately. For accuracy we plan to respond in writing in a document entitled Questions & Answers-Conference that will be posted the within three business days to our department website, [www.ita.vt.edu](http://www.ita.vt.edu) under Computer Purchasing and then under the RFP. Please contact Nancy Sterling if any questions arise. All questions and answers from this conference will be posted on the department website: <http://www.ita.vt.edu/OBMS-RFP>. Additional questions may be emailed to [john.krallman@vt.edu](mailto:john.krallman@vt.edu). These questions and subsequent answers will also be posted on the department website. **Questions will be accepted through October 10, 2008 at 5:00 P.M. Eastern time.**

A. Attendance:

In-person attendance – To attend in person, no pre-arrangement is necessary. However an email to John Krallman with your company name and the number of people planning to attend does help with our planning. Information similar to the teleconference information will be taken at the meeting.

Teleconference attendance – To attend by teleconference, pre-arrangement is necessary. The deadline for receipt of teleconference requests is September 25, 2008 at 3:00 pm Eastern time. The process requires contractors to complete the attached Attendance Roster (Attachment E), including authorized signature confirming the requirements, and email to John Krallman ([john.krallman@vt.edu](mailto:john.krallman@vt.edu)). Virginia Tech will provide teleconference access information by September 26, 2008. Callers will pay their normal long distance fees, if applicable. Note that the maximum number of phone connections per company is two. For sound quality and least background noise, please call from a quiet room; use a hard-wired land line, and mute speakerphones when not addressing the conference.

IX. ADDENDUM:

Any **ADDENDUM** issued for this solicitation may be accessed at <http://www.ita.vt.edu/OBMS-RFP>. Since a paper copy of the addendum will not be mailed to you, we encourage you to check the web site regularly.

X. CONTRACT ADMINISTRATION:

- A. Roderick A. Hall, Associate Vice President for Research, at Virginia Tech or his/her designee, shall be identified as the Contract Administrator and shall use all powers under the contract to enforce its faithful performance.
- B. The Contract Administrator, or his/her designee, shall determine the amount, quantity, acceptability, fitness of all aspects of the services and shall decide all other questions in connection with the services. The Contract Administrator, or his/her designee, shall not have authority to approve changes in the services which alter the concept or which call for an extension of time for this contract. Any modifications made must be authorized by the Virginia Tech Purchasing Department through a written amendment to the contract.

XI. TERMS AND CONDITIONS:

This solicitation and any resulting contract/purchase order shall be governed by the attached terms and conditions.

XII. ATTACHMENTS:

- Attachment A – Terms and Conditions
- Attachment B – Standard Contract Form
- Attachment C – On-Board Monitoring System for Commercial Vehicle Operations: Required Functionality
- Attachment D – Data Collection for Field Operational Test Required Functionality
- Attachment E – Attendance Roster for Pre-Proposal Conference - Teleconference

**Attachment A**  
**TERMS AND CONDITIONS**

**RFP General Terms and Conditions**

See [http://www.purch.vt.edu/html.docs/terms/GTC\\_RFP\\_050608.pdf](http://www.purch.vt.edu/html.docs/terms/GTC_RFP_050608.pdf)

**Special Terms and Conditions**

1. **AUDIT:** The Contractor hereby agrees to retain all books, records, and other documents relative to this contract for five (5) years after final payment, or until audited by the Commonwealth of Virginia, whichever is sooner. Virginia Tech, its authorized agents, and/or the State auditors shall have full access and the right to examine any of said materials during said period.
2. **AVAILABILITY OF FUNDS:** It is understood and agreed between the parties herein that Virginia Tech shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.
3. **CANCELLATION OF CONTRACT:** Virginia Tech reserves the right to cancel and terminate any resulting contract, in part or in whole, without penalty, upon 60 days written notice to the Contractor. In the event the initial contract period is for more than 12 months, the resulting contract may be terminated by either party, without penalty, after the initial 12 months of the contract period upon 60 days written notice to the other party. Any contract cancellation notice shall not relieve the Contractor of the obligation to deliver and/or perform on all outstanding orders issued prior to the effective date of cancellation.
4. **CONTRACT DOCUMENTS:** The contract entered into by the parties shall consist of the Request for Proposal including all modifications thereof, the proposal submitted by the Contractor, the written results of negotiations, the Commonwealth Standard Contract Form, all of which shall be referred to collectively as the Contract Documents.  
A separate contract will be executed by each agency, institution or public body wishing to use any contract resulting from this solicitation.
5. **INDEPENDENT CONTRACTOR:** Nothing in this agreement shall be construed as authority for the contractor to make commitments which shall bind Virginia Tech, or to otherwise act on behalf of Virginia Tech, except as Virginia Tech may expressly authorize in writing.
6. **INSURANCE:** By signing and submitting a proposal under this solicitation, the Offeror certifies that if awarded the contract, it will have the following insurance coverages at the time the work commences. Additionally, it will maintain these during the entire term of the contract and that all insurance coverages will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission.  
During the period of the contract, Virginia Tech reserves the right to require the Contractor to furnish certificates of insurance for the coverage required.  
**INSURANCE COVERAGES AND LIMITS REQUIRED:**
  - A. Worker's Compensation - Statutory requirements and benefits.
  - B. Employers Liability - \$100,000.00
  - C. General Liability - \$500,000.00 combined single limit. Virginia Tech and the Commonwealth of Virginia shall be named as an additional insured with respect to goods/services being procured. This coverage is to include Premises/Operations Liability, Products and Completed Operations Coverage, Independent Contractor's Liability, Owner's and Contractor's Protective Liability and Personal Injury Liability.
  - D. Automobile Liability - \$500,000.00
  - E. Professional Liability to include errors and omissions- \$500,000.00/occurrence.The contractor agrees to be responsible for, indemnify, defend and hold harmless Virginia Tech, its officers, agents and employees from the payment of all sums of money by reason of any claim against them arising out of any and all occurrences resulting in bodily or mental injury or property damage that may happen to occur in connection with and during the performance of the contract, including but not limited to claims under the Worker's Compensation Act. The contractor agrees that it will, at all times, after the completion of the work, be responsible for, indemnify, defend and hold harmless Virginia Tech, its officers, agents and employees from all liabilities resulting from bodily or mental injury or property damage directly or indirectly arising out of the performance or nonperformance of the contract.
7. **MINORITY BUSINESS, WOMEN-OWNED BUSINESSES SUBCONTRACTING AND REPORTING:** Where it is practicable for any portion of the awarded contract to be subcontracted to other suppliers, the contractor is encouraged to offer such business to minority and/or women-owned businesses. Names of firms may be available from the buyer and/or from the Division of Purchases and Supply. When such business has been subcontracted to these firms and upon completion of the contract, the contractor agrees to furnish the purchasing office the following information: name of firm, phone number, total dollar amount subcontracted and type of product/service provided.



8. **NOTICES:** Any notices to be given by either party to the other pursuant to any contract resulting from this solicitation shall be in writing, hand delivered or mailed to the address of the respective party at the following address
- If to Contractor:  
Address Shown On RFP Cover Page  
Attention: Name of Person Signing RFP
- If to Virginia Tech:  
Virginia Polytechnic Institute and State University  
Attn: John D. Krallman, Director  
Information Technology Acquisitions (0214)  
1700 Pratt Dr.  
Blacksburg, VA 24061
9. **PROPOSAL ACCEPTANCE PERIOD:** Any proposal received in response to this solicitation shall be valid for 120 days. At the end of the 120 days the proposal may be withdrawn at the written request of the Offeror. If the proposal is not withdrawn at that time it remains in effect until an award is made or the solicitation is cancelled.
10. **PRIME CONTRACTOR RESPONSIBILITIES:** The Contractor shall be responsible for completely supervising and directing the work under this contract and all subcontractors that he may utilize, using his best skill and attention. Subcontractors who perform work under this contract shall be responsible to the prime Contractor. The Contractor agrees that he is as fully responsible for the acts and omissions of his subcontractors and of persons employed by them as he is for the acts and omissions of his own employees.
11. **PROPOSAL PRICES:** Proposal shall be in the form of a firm unit price for each item or service during the contract period.
12. **QUANTITIES:** Quantities set forth in this solicitation are estimates only, and the Contractor shall supply at proposal prices actual quantities as ordered, regardless of whether such total quantities are more or less than those shown.
13. **COMMUNICATIONS:** Communications regarding this Request for Proposals (RFP) shall be formal from the date of issue for this RFP, until either a Contractor has been selected or the Information Technology Acquisitions Office rejects all proposals. Formal communications will be directed to the Information Technology Acquisitions Office. Informal communications, including but not limited to request for information, comments or speculations regarding this RFP to any University employee other than an Information Technology Acquisitions Office representative may result in the offending Offeror's proposal being rejected.
14. **CERTIFICATION TESTING AND ACCEPTANCE:** The system specified in the contract shall be considered ready for production testing upon receipt of documentation from the Contractor that a successful system audit or diagnostic test was performed at the site demonstrating that the system meets the minimum design/performance capabilities stipulated by the contract. The system shall be deemed ready for production certification testing on the day following receipt of this documentation. Virginia Tech shall provide written confirmation of its acceptance following successful completion of the production certification test. System (software and/or hardware) payment will be authorized after the successful completion and certification test(s).

**Attachment B**  
**Standard Contract form for reference only**  
**Offerors do not need to fill in this form**

COMMONWEALTH OF VIRGINIA  
STANDARD CONTRACT

Contract Number: \_\_\_\_\_

This contract entered into this \_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, by \_\_\_\_\_, hereinafter called the "Contractor" and Commonwealth of Virginia, Virginia Polytechnic Institute and State University called "Virginia Tech".

WITNESSETH that the Contractor and Virginia Tech, in consideration of the mutual covenants, promises and agreements herein contained, agrees as follows:

SCOPE OF CONTRACT: The Contractor shall provide the \_\_\_\_\_ to Virginia Tech as set forth in the Contract Documents.

PERIOD OF CONTRACT: From \_\_\_\_\_ through \_\_\_\_\_.

COMPENSATION AND METHOD OF PAYMENT: The Contractor shall be paid by Virginia Tech in accordance with the contract documents.

CONTRACT DOCUMENT: The contract documents shall consist of this signed contract, Request For Proposal Number \_\_\_\_\_ dated \_\_\_\_\_, together with all written modifications thereof and the proposal submitted by the Contractor dated \_\_\_\_\_ and the Contractor's letter dated \_\_\_\_\_, all of which contract documents are incorporated herein.

In WITNESS WHEREOF, the parties have caused this Contract to be duly executed intending to be bound thereby.

Contractor:	Virginia Tech
By: _____	By: _____
Title: _____	Title: _____

## Attachment C

### On-Board Monitoring System for Commercial Vehicle Operations: Required Functionality July 21, 2008

The following features must be available to be enabled on the On-Board Monitoring System (OBMS) during the Field Operational Test (FOT) data collection period which shall be assumed to begin Spring 2009.

Functional divisions within the system that can be enabled/disabled easily include the following.

1. Driver Behavior Monitoring
2. Forward Collision Warning
3. Roadway Departure Warning
4. Naturalistic / Continuous Data Collection

The following sections describe the functionality available in each of these subsystems.

#### 1. DRIVER BEHAVIOR MONITORING

The OBMS must provide continuous driver behavior monitoring. On-board driver behavior monitoring can be described by defining several sub-functionalities. These include on-board system functionality, driver feedback, back office software data handling, and driver coaching. The following sections describe the key characteristics of each sub-functionality.

##### 1.1 On-Board System Functionality

The OBMS units shall include a processing unit, driver identification capability, face/forward/left/right cameras, and network (CAN-bus) interface. Three classes of data shall be collected by the OBMS including Safety Epochs, Performance Events, and Trip Summaries.

##### 1.1.1 Safety Epochs

Safety epochs shall be captured upon an epoch trigger event. Software algorithms shall run continuously during the drive to look for the following trigger events.

- Driver Manual Trigger – initiated by a driver button press on the driver ID unit
- Possible Collision – an acceleration spike in any direction
- Longitudinal Deceleration – deceleration greater than decel threshold with filtering
- Lateral Acceleration – lateral acceleration greater than threshold with filtering
- Forward Time to Collision – rapid closure to lead vehicle
- Swerve – large lateral accel followed by a secondary lateral accel in opposite direction within a specified time window
- FCW Warning Events – captures an event when the Forward Collision Warning system provides warnings to driver
- RDW Warning Events – captures an event when the Roadway Departure Warning system provides warnings to driver

Upon an epoch trigger, the following data shall be captured from a buffer that is maintained on the OBMS. The epoch must include data from some amount of time prior to the epoch trigger and some amount of time after the epoch trigger. As an example, there may be 10 seconds of data captured prior and 5 seconds after the trigger. The resulting data and video files shall be stored onto the OBMS hard drive. Data that will be stored with the epoch shall include:

- 10 Hz or better video including views of forward roadway, drivers face, left mirror mount looking back and right mirror mount looking back
- In-cab audio
- Sensor Data
  - GPS Time
  - Trip Time
  - Time Since Break
  - Vehicle speed (GPS and Vehicle Network)
  - Lateral Acceleration
  - Longitudinal Acceleration

- Vertical Acceleration
- Yaw Rate
- Engine RPM
- Gear
- Cruise Control State
- Brake State
- Brake Pressure
- Throttle Position
- Engine Brake State
- Driver's Seat Belt State
- Turn Signal State
- Alcohol Sensor Value
- Lane Position
- Eyes Forward Monitor
- RADAR
- Outside air temperature

The OBMS units shall be outfitted with a laptop hard drive able to store approximately 4 months of continuous data collection in an operating fleet truck.

### *1.1.2. Performance Events*

A number of driver performance events shall also be captured by the system. These differ from safety epochs in that a much smaller subset of data will be captured and there will be no human review of these events. Performance events are designed to allow the driver supervisor to better understand how the driver is operating the equipment with respect to efficiency, wear and tear, etc.

The following are examples of event triggers that shall cause data to be captured by the system.

- Warm-up idle event – This captures information about length of idle and resulting engine temperatures at the time the drive is started.
- Pre-shutdown idle event – This captures information about length of idle and resulting engine temperatures at the time the engine is shut down.
- Operational idle event – This captures information about the length of idles between drives but where engine is not shut down.
- Speeding event – This captures information about basic speeding where speeding is defined as greater than 75 MPH.
- Engine overspeed event – This captures information about the engine speed when it is greater than 1800 RPM
- Hard brake event – This is intended to identify non-safety related hard braking events.
- Hard corner – This is intended to identify non-safety related hard cornering events.
- Coasting event – This captures information when out of gear for more than 10 seconds.
- Backing event – This captures information if velocity is negative or positive and gear is in reverse.
- Lane change aborts – This captures information if lane tracker quality is good and vehicle begins a lane change on roadway then returns to lane.
- Solid line crossings – This captures information if lane tracker quality is good and vehicle crosses solid line on roadway.
- Unsignaled lane change event – This captures information if lane tracker quality is good and vehicle changes lanes on roadway without the turn signal indicator.

All event data shall be written to the usage and tracking file along with the trip summary data.

### *1.1.3. Trip Summaries*

The trip summary is an accumulation of various performance statistics that are gathered as the vehicle is driven over the course of a trip. Examples of the items that shall be contained in the trip summary include:

- Odometer at start of trip
- Odometer at end of trip
- Time at start of trip
- Time at end of trip
- Total fuel consumed during trip
- Fuel consumed while driving (not idling)
- Fuel consumed while backing
- Backing duration (time spent backing)
- Idling duration (time spent idling)
- Time spent with Driver Seat Belt On
- Variance in throttle position
- Time spent with throttle at maximum
- Measures of Lane Tracker Performance
  - Time that lane tracking quality is “good”
  - Time that lane tracking quality is “not good”
- Measures of Eye Tracking Performance
  - Time that eye tracking quality is “good”
  - Time that eye tracking quality is “not good”

### 1.2. *Driver Feedback*

In-cab driver feedback shall be accomplished through an in-vehicle display (Driver-Vehicle Interface, DVI). The DVI shall present the following information to the driver:

- Login information allowing the driver to identify themselves by entering a PIN code
- Real time headway feedback to the vehicle in front.
- Lane departure warning when lane boundary crossed without turn signal application
- Graded short headway / imminent collision warnings
- Safety epoch messages indicating when safety epochs have been triggered
- Performance event messages indicating when performance events have been triggered
- Time and distance into drive
- Historical trip summary data

### 1.3. *Safety Epoch Data Reduction / Classification*

As epochs are transferred from the OBMS to the Technology Vendor’s incoming epoch queue, the Technology Vendor’s safety analysts shall review each epoch and make classifications to describe the event including: event type, coaching recommendation, roadway type, etc.

### 1.4. *Back Office Software and Data Handling*

The back office software system shall provide access to all data collected by the system allowing a driver supervisor or safety professional to determine which behaviors their drivers are exhibiting. The back office software shall provide many views into the data.

### 1.5. *Driver Coaching*

The back office software shall provide support for driver coaching. During a coaching activity the driver supervisor can use the system to generate a report of performance since the last coaching activity. These epochs may be reviewed with the driver showing what they did well or what they might have done better to improve their overall safety.

## **2. FORWARD COLLISION WARNING**

The system must include a Forward Collision Warning system. The Forward Collision Warning System shall include a forward RADAR system capable of tracking up to 32 objects simultaneously. The RADAR unit shall have the capability of distinguishing classes of objects such as trucks, cars, pedestrians, static roadside objects. The system shall provide feedback to

the driver about following distance through continuous display of headway to lead vehicle if there is a lead vehicle within range. In addition, advisory and crash imminent warnings shall be presented to the driver.

### **3. ROADWAY DEPARTURE WARNING**

The system must include a Roadway Departure Warning system. The Roadway Departure Warning system shall include a forward camera video based lane tracking system. The system shall provide advisory messages to driver when their lane tracking performance degrades. The system shall also provide imminent roadway departure messages.

### **4. NATURALISTIC/CONTINUOUS DATA COLLECTION**

In addition to the data to support the evaluation of the OBMS, the system must also be capable of simultaneously capturing data continuously as the vehicle is driven and store it to the OBMS's hard drive. The data shall accumulate until the hard drive is swapped for a fresh one. The following data shall be recorded continuously:

- Video: 4 camera views recorded at 30 Hz
- Sensor Variables at 10 Hz and stored into a binary data file
- Lane Tracking Variables
- GPS- Global Positioning Satellite Variables
- Acceleration Variables
- Light (lux)
- Alcohol Sensor ( atmospheric alcohol concentration)
- Forward Radar
- Sound Meter- measures sound inside the cabin
- Eye Glance and Head Position Variables
- Network- information gathered directly from the vehicle (CAN-bus; will vary depending on vehicle).

## Attachment D

# EVALUATING THE SAFETY BENEFITS OF AN ON-BOARD MONITORING SYSTEM IN COMMERCIAL VEHICLE OPERATIONS: CONDUCT OF THE FIELD OPERATIONAL TEST AND DATA COLLECTION

### Background and Research Objectives

The mission of the Federal Motor Carrier Safety Administration (FMCSA) is to reduce the number and severity of crashes on our Nation's Highways. Of the people killed in motor vehicle crashes in 2005, 12% (5,212) died in crashes that involved a large truck. Another 114,000 people were injured in crashes involving large trucks. About 15% of those killed and 24% of those injured in large truck crashes were occupants of large trucks.

In direct support of this mission, the *On-board Monitoring System (OBMS)* for Commercial Motor Vehicle (CMV) safety research program is being conducted by FMCSA in cooperation with the Virginia Department of Transportation (VDOT), the Virginia Tech Transportation Institute (VTTI) and a Technology Vendor. The Independent Evaluator of this project will be tasked under a different contract; as such, the Independent Evaluator's tasks are not covered in this document.

The objective of the OBMS program is to determine whether on-board monitoring will reduce at-risk behavior among commercial drivers and improve driver safety performance. More specifically, the project will determine if recording and reporting of safety critical events, followed by coaching drivers (by safety managers) using these safety events as feedback, will enhance safe driving behavior.

Operator monitoring and feedback can be characterized as a behavior-based safety method. Safe behavior is rewarded and unsafe behavior is coached, thereby proactively improving overall safety. The OBMS to be used in this study will record (through snippets of video and other performance/kinematic measures) unsafe driving behaviors and provides real-time feedback to drivers. Recorded driver problems (for example, hard braking maneuvers) are then transmitted to, and reviewed by, the driver's fleet safety manager. Depending on the judgment of the fleet safety manager, the recorded incident can then be shown to the driver in a coaching session with the goal of pinpointing the problematic behavior and providing instruction on how to avoid that problem in the future. After drivers view their recorded errors with the safety manager, and are instructed as to the nature of the problematic behavior, corrective action and improved behavior are expected to result.

Conceptually, the prospect of improving driver behavior and reducing safety critical incidents fits well with FMCSA's mission. Hypothetically, successful implementation of the OBMS program may significantly reduce the number and severity of crashes involving CMVs. This program will test that hypothesis. More specifically, the goal of the OBMS project is to answer the following research questions:

- Does individual driving performance improve over time with OBMS feedback?
- How does the OBMS and feedback program improve safety?
- How do the driver's opinions and attitudes towards the OBMS system and program change over time?
- What are the fleet safety manager's opinions and attitudes about the OBMS system?
- What is the business case for implementing an OBMS program?

In addition to better understanding the efficacy of an OBMS program, a substantial added benefit to FMCSA from the conduct of this study will be the collection of continuous, naturalistic driving data. For the purpose of coaching, the safety manager requires a small snippet (several seconds) of data surrounding the driver error. This serves the purpose of providing detailed instruction to drivers that is directly associated with the at-risk or safe driver behavior. However, having only small segments of data limits the long-term usefulness of the driving data for further analyses. More specifically, anything but a continuous dataset limits future FMCSA data mining studies that could investigate various driving-related issues. As such, a second requirement of the OBMS (in addition to providing coachable data) is to collect continuous, naturalistic data from the study fleet. Therefore, each research vehicle will be capable of supporting the requirements of the current study that is focused on evaluating the safety benefits of an OBMS; in addition, research vehicles will also be capable of recording

continuous data to support future analysis efforts that are beyond the scope of the current effort. The continuous data will not be used in the current effort, but will be archived at VTTI for future use.

The remainder of this statement of work outlines the tasks associated with conducting the OBMS FOT and collecting the data. As noted, a separate task document will outline the data analysis tasks for the Independent Evaluator.

## **RESEARCH TASKS**

There are nine primary tasks associated with collecting the data to support this project. Each task is described in turn.

### **Task 1. Data Collection Planning**

#### **1.1 Hold Kickoff Meeting**

A kickoff meeting shall be held shortly after the contract award. Location and timing will be determined and agreed upon by FMCSA and the Study Team (i.e., VTTI, Technology Vendor, and Independent Evaluator).

#### **1.2 Select Fleets**

A target of two carrier partners will be selected to provide 250 tractors for OBMS FOT testing and naturalistic driving. Criteria for carrier partner selection are: (i) operation of Class 8 tractors with a safety need, and (ii) willingness to participate in the FOT and data sharing.

The Technology Vendor will be responsible for selecting and securing the study fleets.

#### **1.3 Constitute Peer Review Panel**

An important element of the OBMS program is the Peer Reviews. Two peer reviews will be conducted. The first peer review will convene, in Washington, D.C. a group of 4-6 experts. Experts may include representatives from motor carriers, trade associations, experimental design experts, and other stakeholders. Presentations from the contracting team will be made and comments from the panel requested. As described below, this panel will convene after the development of the experimental plan. FMCSA will have final say over the experts included in the panel, while VTTI will make recommendations. A second peer review, described later, will be for the panel to review, and comment on, the draft final project report.

VTTI will be responsible for putting together the peer review panel.

#### **1.4 Develop Data Collection Plan**

Details of this plan will be contingent on characteristics of the fleets from carrier partners determined in Task 1.2. This is a leveraging activity, based on provision of a data acquisition system (DAS) with the OBMS equipment; thus, significant naturalistic data will be collected as a consequence of the OBMS installation.

The Data Collection Plan will describe data collection for the OBMS evaluation and the continuous data collection effort. The document will include a workplan and timetable to develop the necessary process, procedures, and documentation for the successful accomplishment of the project. The Data Collection Plan must also address the installation and testing of the OBMS in the trucks and must describe the coaching process and related documentation. Note that an Experimental and Analysis Plan will also be developed, by the Independent Evaluator, under a separate contract.

The Technology Vendor will be responsible for developing the data collection plan.

#### **1.5 FMCSA Review of Data Collection Plan**

Once completed, FMCSA will review the Data Collection Plan, and the Experimental and Analysis Plan to be developed by the Independent Evaluator, and provide comments and feedback. The Technology Vendor, with assistance from VTTI, will make the necessary changes, writing a revised plan. The revised plan shall then be provided to the peer review panel for review.

The Technology Vendor will be responsible for developing the revised data collection plan.



## **1.6 Conduct Peer Review Meeting**

VTTI will hold a peer review meeting to discuss the Data Collection Plan, and the Experimental Design and Analysis Plan developed by the Independent Evaluator, and to solicit feedback from the peer review panel. VTTI, the Technology Vendor, and the Independent Evaluator will make a presentation to the panel that outlines the Data Collection Plan and the Experimental and Analysis Plan. Feedback from the panel shall be documented and integrated into a Final Data Collection Plan.

The Study Team (i.e., VTTI, Technology Vendor, and Independent Evaluator) will be responsible for conducting the peer review meeting.

## **1.7 Prepare and Submit IRB Materials**

Once the Data Collection Plan and the Experimental and Analysis Plan have been finalized, the contractor can prepare/finalize the data collection materials and submit an application to the IRB.

VTTI, with support primarily from the Independent Evaluator, will be responsible for preparing and submitting all IRB materials. The VT IRB will be the IRB of record for this study.

## **Task 2. Data storage infrastructure and Analysis Methods**

### **2.1 Develop Data Storage, Transfer, and Retrieval Solutions**

In this task, the Technology Vendor will work with the Independent Evaluator to develop the data storage, data transfer, and data retrieval protocols that will be used during the study. Note the Independent Evaluator will be working with the FOT data only, and not the continuous, naturalistic dataset.

### **3.2 Develop Data Processing/Coding Protocols and Tools**

This task will involve the Technology Vendor developing/finalizing the plan for data processing and incident coding. This will include working with other Study Team members to ensure that the protocols and tools are well understood. In particular, the Independent Evaluator's staff will need to be trained on all aspects of data collection, reduction, and evaluation in order to conduct the analyses for this project.

## **Task 3. Pilot Test**

### **3.1 Pre-Fleet Installation System Shakedown Test**

Prior to the commencement of full OBMS installations on all carrier vehicles, a single truck from each fleet will be instrumented with the OBMS. The purpose of this preliminary (pilot) installation and testing will be to help ensure the OBMS is working reliably and the data collection and reduction process works as planned. This will also give the fleet safety managers an opportunity to work with sample data to assess how the systems work in their vehicles and how the coaching process should be conducted. In general, pilot testing will demonstrate the OBMS is reliably collecting data and the back-end processing of the data is being handled correctly. Additionally, this pilot testing will also provide the Independent Evaluator a sample dataset that can be used to ensure that the data collected is at the level necessary to develop the analytical models.

The Technology Vendor will be responsible for this task.

### **3.2 Finalize OBMS Training Materials**

Based on feedback from the Independent Evaluator, and VTTI, the Technology Vendor shall revise and finalize the OBMS training materials that will be presented to the drivers and safety managers.

### **3.3 Conduct Readiness Assessment**

Prior to the installation of all 250 systems, the Study Team will assess the results from the pilot tests and, in discussions with FMCSA, determine whether or not the project should proceed.

### **3.4 Provide Information to Drivers to Introduce the Program**

For the project to be successful, buy-in from the drivers and safety managers (coaches) is critical. As such, at approximately 3 months prior to the start of data collection, the fleets will announce to all employees their new company policy whereby OBMS devices will be integrated into trucks. The Technology Vendor will provide informational brochures to the fleets to

provide to drivers. Approximately 1-2 months prior to the start of data collection, the Study team will provide information on the study (e.g., posters, hand-outs, etc). At approximately 1 month prior to the start of the data collection, the Study Team will hold meetings for drivers to discuss and answer questions about the study. It is expected that the policy will be in place prior to the study and that the purpose of the study will be to evaluate the success of the policy.

#### **Task 4. Pre-Study Subjective Data**

The Independent Evaluator will provide questionnaires that will be administered to drivers, likely via the OBMS interface. The Technology Vendor will ensure these questionnaires are programmed into the OBMS and are accurately collecting driver input.

#### **Task 5. OBMS Installation and Training**

##### **5.1 Develop Carrier OBMS Infrastructure**

The Technology Vendor will conduct carrier process, wireless infrastructure and other reviews to ensure that implementation of OBMS hardware and data acquisition infrastructure can be conducted.

##### **5.2 Install OBMS and DAS Systems**

The Technology Vendor will work with carriers to install OBMS and data recording instrumentation on 250 trucks across carrier fleets. It is anticipated that the installation process details will vary among the carriers, but it is also anticipated the end-result will be a uniform and consistent installation of the same product.

##### **5.3 Conduct Training Sessions**

###### *5.3.1 Conduct Driver Baseline Training*

The initial driver training provided before the baseline data collection begins will be provided. The Technology Vendor will provide the training.

###### *5.3.2 Conduct Carrier Management Training*

The Technology Vendor will conduct carrier management training topics such as how the system functions, how to access and interpret the data, and how to perform driver-management counseling sessions to provide drivers with adequate feedback. This training will occur shortly before the baseline period ends so that the safety managers can use the training in their coaching interventions.

###### *5.3.3 Conduct Driver OBMS Training*

As the baseline data collection nears completion, the Technology Vendor will provide a training session to the drivers that cover both the real-time feedback provided by the OBMS and how to interpret the off-line feedback reports that will be provided to the drivers.

#### **Task 6. On-Road Data Collection**

Following the Experimental Design and Analysis plan developed by the Independent Evaluator, the Technology Vendor will conduct the FOT, collecting data for both the FOT evaluation and the continuous dataset that will be archived at VTTI.

As noted, this project includes two different data collection components that will operate in parallel as the study is being conducted. First, the primary data collection activity involves the standard data capture and flow processes that comprise the Technology Vendor's safety system. The data being captured, transferred, reduced and presented to the carriers by this system are used to provide feedback to drivers, inform carrier management of driver performance, and to coach drivers with the goal of changing unsafe or risky behaviors.

Second, to maximize the benefit to FMCSA, continuous data will be captured during the FOT to create a naturalistic database that can be used by researchers to answer high priority safety related questions in the future.

## **6.1 Data Collection for the FOT**

Twelve months of data are expected to be collected over an 18 month data collection window. To be refined in the Independent Evaluator's Experimental Design and Analysis Plan, it is anticipated that 250 drivers will begin the study and be expected to be in an instrumented truck for 12 mos. However, given that turnover in the trucking industry is very high (over 100%), it may be that only a portion of the drivers that begin the 12 month study will last all 12 mos. As drivers leave the company, and therefore drop out of the study, new drivers will take over the instrumented OBMS truck and begin in the study. This approach will maximize the amount of data collected and allow for analyses to examine longitudinal effects of the OBMS program.

During the FOT, the Technology Vendor will be responsible for tracking the drivers, trucks, and baseline/test conditions and provide regular reports to VTTI and the Independent Evaluator.

### *6.1.1 Baseline Data Collection*

Baseline data refers to the condition where the OBMS is collecting critical incident information, but no feedback is provided to the driver (either from the OBMS interface or from the fleet safety manager).

The purpose of the baseline is to collect data to document current driver behavior without the use of the OBMS feedback. The baseline allows for a reference point to determine whether or not the system had any immediate influence on driver behavior.

Note that if the trucks already have real-time safety systems built in, such as forward collision warnings or lane departure warnings, those systems will remain active and available to the drivers for the duration of both the baseline and OBMS data collection phases.

### *6.1.2 OBMS (Treatment) Data Collection*

After collecting the baseline data from each driver, the OBMS real-time and off-line feedback will be enabled. Training for the drivers on how to use this feedback will be provided in a previous task.

## **6.2 Continuous Naturalistic Data Collection**

The naturalistic data collection activity is focused on capturing a continuous stream of video and data on-board the vehicle to document real world driving behavior. Unlike the commercial dataset which has a very specific intended use, the naturalistic dataset can be used as an information source to address high-priority research questions as they arise now and in the future.

The Technology Vendor is responsible for collecting this data and supplying it to VTTI on a regular basis during the course of the study.

## **Task 7. Project Update Meeting**

Approximately one year into the program, the Study Team will meet with FMCSA to provide a project update. A meeting time and location convenient to all parties will be determined.

## **Task 8. Data Analysis**

Data analysis for this project will be covered under a separate contract and will be conducted by an Independent Evaluator. The data analyses will focus on the safety benefits of the OBMS and will not involve analysis of the continuous dataset. The Technology Vendor will be responsible for ensuring that the data are provided to the Independent Evaluator to answer the following questions:

- Does individual driving performance improve over time with OBMS feedback?
- How does the OBMS and feedback program improve safety?
- How do the driver's opinions and attitudes towards the OBMS system and program change over time?
- What are the fleet safety manager's opinions and attitudes about the OBMS system?
- What is the business case for implementing an OBMS program?

## **Task 9. Reporting and Reviews**

### **9.1. Draft Final Report**

The Independent Evaluator will lead the writing of the final report, though the Technology Vendor and VTTI will contribute based on the work performed during the study.

### **9.2 FMCSA Review of Draft**

Once a draft of the final report has been written, it will be submitted to FMCSA for review. FMCSA will provide comments within 30 days.

### **9.3 Revise Draft Report Based on FMCSA Comments and Submit to Peer Review**

Based on the comments and edit suggestions made by FMCSA, a revised report will be written, again lead by the Independent Evaluator but supported by the Technology Vendor and VTTI. The revised final report will be submitted to the peer review panel for document review and comments.

### **9.4 Final 508 Compliant Report and Submission to FMCSA**

Comments and edit suggestions will be addressed and a revised final report written and delivered to FMCSA. The final report will be 508 compliant and the Independent Evaluator will take the lead on ensuring that the document conforms to 508 guidelines. After the revised final report has been delivered, the Study Team will conduct a final briefing at FMCSA headquarters in Washington, D.C. The timing of the final briefing will be agreed to by FMCSA and the contractors.

## **Task List and Planned Due Date**

<b>TASK #</b>	<b>DESCRIPTION</b>	<b>MONTHS AFTER TASK AWARD</b>
1.1	Hold Kickoff Meeting	1 mo ATA
1.2	Select Fleets	1 mo ATA
1.3	Constitute Peer Review Panel	1 mo ATA
1.4	Develop Data Collection Plan	2 mo ATA
1.5	FMCSA Review of Collection Plan	3 mo ATA
1.6	Conduct Peer Review Meeting	4 mo ATA
1.7	Prepare and Submit IRB Materials	5 mo ATA
2.1	Develop Data Storage/Transfer/Retrieval	3 mo ATA
2.1	Develop Data Processing/Coding Protocols	3 mo ATA
3.1	Pre-Fleet Installation System Shakedown	5 mo ATA
3.2	Finalize OBMS Training Materials	6 mo ATA
3.3	Conduct Readiness Assessment	6 mo ATA
3.4	Provide Information to Drivers	6 mo ATA
4.0	Pre-Study Subjective Data	7 mo ATA
5.1	Develop Carrier OBMS Infrastructure	7 mo ATA
5.2	Install OBMS and DAS Systems	7 mo ATA
5.3	Conduct Training Sessions	7 mo ATA
6.1	Data Collection for the FOT	25 mo ATA
6.2	Continuous Naturalistic Data Collection	25 mo ATA
7.0	Project Update Meeting	12 mo ATA
8.0	Data Analysis	29 mo ATA
9.1	Draft Final Report	32 mo ATA
9.2	FMCSA Review of Draft	33 mo ATA
9.3	Revise Draft and Submit to Peer Review	35 mo ATA
9.4	Final 508 Compliant Report/Submission	38 mo ATA

**Attachment E**  
**VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY**  
**Attendance Roster for Pre-Proposal Conference - Teleconference**

**RFP Number 648254 - - Onboard Monitoring System for Commercial Vehicles – Field Operational Study Assistance**

TELECONFERENCE registration deadline is September 25, 2008, 3:00 pm Eastern - - complete and email this form to [john.krallman@vt.edu](mailto:john.krallman@vt.edu) or fax to 540-231-4110

Date: September 29, 2008 - - Time: 3:30 pm - - Location: RB14, Room 115, 1770 Forecast Dr, Blacksburg, VA 24060

**PLEASE PRINT or TYPE**

INDIVIDUAL NAME	COMPANY NAME	MAILING ADDRESS	PHONE NUMBER	FAX NUMBER	E-MAIL

The authorized signature below confirms the following:

- 1) the above information is accurate - only those individuals named above will attend the teleconference - any changes will be emailed or faxed by September 26, 2008, 3:00 pm
- 2) the company will honor the **limit of two phone connections** for their entire company
- 3) the company will minimize background noise during teleconference participation – suggestions: call from quiet room, use hard-wired land line, mute speakerphones
- 4) the company will not share the phone number and access code (provided later) with anyone beyond those named above

Authorized Signature for Company Named Above: \_\_\_\_\_

Printed/Typed Name and Title: \_\_\_\_\_