Description of document:	Records related to Department of Transportation (DOT) contracts issued to the Massachusetts Institute of Technology (MIT), concerning a study of driver confusion about propulsion shutdown of keyless vehicles during an unintended acceleration event, 2007*
Request date:	2015
Released date:	19-October-2015
Posted date:	16-November-2015
Note:	* Some records undated
Source of document:	Freedom of Information Act Request Office of the Secretary of Transportation 1200 New Jersey Ave SE W94-122 Washington, DC 20590 Fax: (202) 366-8536 Email: ost.foia@dot.gov

U.S. Department
of Transportation

**Research and
Innovative Technology
Administration**

John A. Volpe
National Transportation
Systems Center

55 Broadway
Cambridge, Massachusetts 02142-1093

October 19, 2015

FOIA Control No. 2015-60

CERTIFIED MAIL, RETURN RECEIPT REQUESTED

This is in response to your FOIA request. You are requesting pursuant to the Freedom of Information Act (5 U.S.C. 552), a copy of statement of Wok, the reports and presentations associated with the contract issued to the Massachusetts Institute of Technology contract DTRT5707D30006 and DTRTVTTO2006, concerning a study if driver confusion about propulsion shutdown of keyless vehicles during an unintended acceleration event

All information located at the Volpe Center is being provided with the exception of MIT's proposal. This is being withheld under 41 U.S.C. § 253b (m), prohibits agencies from releasing proposals under the Freedom of Information Act except for a contract proposal set forth or incorporated by reference into a contract. This contract does not incorporate the proposal into the contract.

The fee for FOIA review and determination of this request is waived.

I am responsible for this initial decision and you have a right to appeal this decision. Under 49 CFR 7.21, within 30 days from the date you receive this initial decision, you may file a written appeal. Your appeal should be sent to: Judy Kaleta, Deputy General Counsel, West Building, Room W92-318, U.S. Department of Transportation, 1200 New Jersey Avenue, SE, Washington, DC 20590. Your appeal should include the reference number used above and all information that forms the basis for your appeal. Please mark the envelope, which contains your appeal, with the words: "FOIA Appeal". If you file an appeal, the Deputy General's decision will be the final administrative decision. If you have any questions concerning this initial decision, you can contact me at (617) 494-2718.

Thank you for your patience.

Sincerely,

Andrea Griswold

Andrea Griswold
Volpe Center FOIA Officer
(617) 494-2718 (P)
(617) 494-3005 (F)

SECTION C – DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1 Statement of Work/Specification

The MIT Center for Transportation and Logistics shall furnish the necessary personnel, services, equipment and materials (except as otherwise specified) required to comply with the Statement of Work/Specifications.

C.2. Background

The United States Department of Transportation's (DOT) Research and Innovative Technology Administration, Volpe National Transportation Systems Center (Volpe Center), has existing and projected research requirements for which the Government contemplates utilizing the resources of the MIT Center for Transportation and Logistics ("CTL") in the performance of selected research support tasks. These requirements are listed below in Part C.4. This list is intended to be representative of the areas of work to be carried out under this contract.

C.3. Objective

The objective of this contract is to conduct advanced transportation related research into aspects of transportation technology, policy, and safety as relating to human factors, and consistent with the graduate and undergraduate educational mission of MIT. Tasks to be defined will cover all modes of transportation operations and safety-related programs, including - but not limited to - the following general areas:

- Applying computer science techniques to air traffic control, traffic management systems, intelligent transportation systems, transportation system scheduling and planning, and safety enhancement.
- Using test facilities for verification of appropriate application of new technologies to transportation systems problems.
- Using simulators and modeling tools to develop, analyze, and improve transportation safety, policy and planning, including asset management and risk management.
- Applying the expertise and resources of the Volpe/MIT Center for Human Factors Research to conduct research on advanced man-machine interfaces in transportation systems.
- Determining benefit-costs of various human factors safety, security and mobility issues and solutions within and across transportation systems.

C.4. Task Areas

- Under this contract, as firm work requirements materialize within the period of performance set forth herein, within the funds allotted hereunder, and consistent with the terms and conditions of this Contract, the Contracting Officer will direct the Contractor to perform work which falls within one of the Task Areas described below. The direction will be in the form of Task Orders (TOs) issued by the Contracting Officer.

The various types of activities, which the Contractor may be required to perform under this contract, are similar to those in the following Task Areas.

Task Area 1: Adapt and comprehensively test advanced computer techniques for automating air traffic control (ATC) systems and performing other ATC tasks to determine their potential for implementation into the Federal Aviation Administration's (FAA) and the National Aeronautic and Space Administration's (NASA) operational ATC system. Utilize advanced test facilities such as the International Center for Air Transportation and the Center for Electromagnetic Research to perform research studies and simulation in the areas of traffic management systems, transportation system scheduling and planning, and safety enhancement.

Task Area 2: Using advanced simulators and modeling tools associated with human-system interaction in air, rail, and highway modes to develop, analyze, and improve transportation safety, security and planning.

Task Area 3: Employ state-of-the-art software to conduct research on transportation-related technologies (e.g. electronic braking, positive train control, etc.).

Task Area 4: Applying the resources and advanced technology in the realm of computer-human interfaces and conducting research in the area of traffic management, controller/pilot situational awareness, and enhanced safety.

Task Area 5: Use advanced tools for modeling and measuring aircraft and aircraft engine performance and environmental impact as it applies to vehicle or system habitability of the operator and community.

Task Area 6: Utilize powerful computer tools and models developed by the Intelligent Transportation Systems (ITS) program for traffic and congestion analysis including highway and transit operations. At the core of the ITS suite of tools are DynaMIT, a real-time decision-support tool, which provides traffic estimation and prediction capabilities and MITSIMLab, a traffic simulation tool for evaluation and testing of ITS and other traffic management applications, such as incident detection and response, traffic control and traveler information systems. Apply extensive capabilities in the detailed modeling of driving and travel behaviors, such as mode, route and departure time choice, response to route guidance and information, acceleration, lane changing and gap acceptance. Employ a variety of supporting tools and utilities including software that allows DynaMIT and MITSIMLab to communicate and exchange information, tools for calibration of the simulation models, animation Graphical User Interfaces (GUI's) and other tools to generate the required inputs and analysis of the simulation outputs.

Task Area 7: Conduct research on Supply Chain Resilience. The information and expertise developed under this program are important for future supply chain security programs in the areas of transportation and logistics and human decision making.

C5. Program Administration: MIT Transportation Human Factors Research Program

C5.1 Background

Since it's founding in 1970, adjacent to the MIT campus, the DOT/RITA Volpe center has provided analytical, scientific, and engineering support to the US Department of Transportation. Collaborative relationships naturally arose between MIT faculty and Volpe researchers, managed either via direct contracts between Volpe and MIT administrative units or via a blanket Task Order with the MIT Center for Transportation (now the Center for Transportation and Logistics). Many of these centered in the Transportation Human Factors area. In the late 90s, the CTL Task Order provided $3-5M support annually, much of which went directly to MIT graduate student stipends and tuition. Projects involving graduate students physically working at Volpe qualified for MIT's off-campus overhead rate, lowering the costs of research for Volpe's DOT sponsors, and providing physical space for student offices and labs that was increasingly scarce on the MIT main campus. The arrangement also provided access to unique Volpe facilities in the areas of air traffic control, acoustics and air quality, flight simulators and railroad simulators. Volpe created a Volpe/MIT Transportation Human Factors Laboratory in 1993 in Volpe Building 6, and signed a Cooperative Research and Development Agreement (CRADA) with MIT. The atmosphere was collegial, with students, faculty and Volpe staff working side by side and having frequent joint seminars. Between 1998 and 2003, 13 MIT faculty participated, collaborating with an equal number of Volpe senior collaborators.

MIT and Volpe sought to renew the task order agreement in the spring of 2004. However during the negotiations, it was learned that DOT's post 9/11/2001 security policies required that – like all other Volpe employees - all MIT employees – including graduate student research assistants - working on the task order now had to be US citizens or permanent residents, and have background investigations and training appropriate for handling sensitive information. MIT has had a longstanding policy that foreign faculty, students, staff, and scholars should not be singled out for restrictions in their access to MIT's on-campus educational and research activities. Volpe appealed the DOT policy to the Secretary of Transportation, but was denied. Reluctantly, MIT and Volpe decided not to pursue Task Order renewal, and most tasks were terminated in September 2004. Faculty and students – even those who were US citizens – turned in their Volpe badges and closed their offices. In cases where the research could be completed entirely on the MIT campus, and did not require access to Volpe simulators or other unique facilities, separate contracts were put in place – at the on campus MIT indirect cost rate. Lacking Volpe security credentials, MIT faculty and students could now only visit Volpe colleagues on an escorted basis. The collegiality resulting from daily professional contact ceased.

MIT's longstanding policy against foreign national restrictions for work performed on the MIT campus has been motivated by the desire not to create a "two class" atmosphere among staff – particularly graduate student research assistants. However, MIT has long recognized that there are several federally sponsored programs specifically designed for education of US Citizens, such as NIH and NSF Training Grants, the NASA Graduate Student Researchers

Program, and routinely administers government and private fellowships (e.g. minority fellowships) which carry US Citizenship restrictions, (though they do not necessarily provide access to restricted facilities). MIT's June 2004 policy on Foreign National Restrictions on Research Projects specifically acknowledged that in circumstances where the research enhances US capability and manpower in a particular area of science and engineering, exceptions to foreign national restrictions for training programs could be made. MIT currently has contracts for graduate student support with the Draper Laboratory and the Lincoln laboratory in which only US Citizens or permanent residents are eligible. Students are physically located at Draper and Lincoln, obtain security credentials there, and their work is co-supervised by MIT faculty and Draper/Lincoln staff. However the students attend regular MIT classes, and because of their proximate location to the MIT campus their thesis research is not considered "in absentia". MIT has recognized that background checks and information technology security procedures are necessary and appropriate in specific cases where MIT employees work off-site. MIT considers the Draper and Lincoln fellowship programs compatible with MIT policy on foreign nationals because the students are able to fully participate in both their research group and department activities and can openly present their work to their peers in the same way that students working on campus can. The MIT-Volpe Transportation Human Factors Research Program will operate on a similar model. In late 2005, the operations plan for the new program (described below) was reviewed and approved by the Director of CTL, the MIT Provost, the MIT Research Policy Committee, the Director of MIT's Engineering Systems Division, and the Heads of the Departments of Civil and Environmental Engineering and Aeronautics and Astronautics. This plan now forms the basis for MIT's response to DTRT57-07-R-20012.

C5.2 Transportation Human Factors Research Program Operations

The goal of the proposed new MIT-Volpe Transportation Human Factors research program is to initiate active research collaborations in the areas identified in Section C.3 above. Collaborations would be between Volpe technical staff members, MIT faculty and senior research staff members, and the graduate student(s) they co-supervise. The MIT supervisor's role would not be limited to that of pro-forma thesis reader/signer. The MIT supervisor is expected to actively participate in the genesis and progress of the project, make a commitment to spend time at Volpe, remain in continuing contact with their Volpe collaborator, actively co-supervise the MIT student's work, and provide academic and professional counsel to the student on their roles and responsibilities. The Faculty member will ensure that the student presents their work both at Volpe and in their home Department at MIT, and also at professional conferences and publishes their results in scholarly journals in a timely fashion. Undergraduate students may also participate as 5-10 hr/wk assistants through MIT's Undergraduate Research Opportunities Program (UROP, http://mit.edu/urop/), although they would usually have to work on an escorted basis, since obtaining information security credentials for them is likely impractical.

The proposed Transportation Human Factors Research Program would be limited to faculty, staff, and students collaborating with Volpe researchers on transportation technology, policy and safety issues as relates to human factors. However tasks may cover all modes of transportation. The program would be administered by the MIT Center for Transportation

and Logistics (http://ctl.mit.edu/) in the Engineering Systems Division of MIT's School of Engineering, directed by Prof. Yossi Sheffi, and involving more than 50 faculty and senior staff members from many different departments. Faculty affiliated with other MIT units (e.g. the MIT Media Lab, the Age Lab, the International Center for Air Transportation) can become affiliated with CTL and thereby participate. CTL staff currently includes several program coordinators, an administrative and fiscal officer, and several support staff. The MIT-Volpe Transportation Human Factors Research Program would be under the immediate supervision of two coordinators, one at MIT and one at Volpe. The MIT Program Coordinator will be Dr. Charles M. Oman (Director of MIT's Man Vehicle Laboratory), who has collaborated with Volpe researchers since 1993, and participated in the original CRADA that created the Volpe Transportation Human Factors Laboratory.

The annual process for task order definition and student recruitment is expected to operate this way: In early fall the MIT and Volpe Program Coordinators would work with Volpe staff research sponsor collaborators to identify prospective projects in the 6 human factors related task areas identified in C.4 above, and define detailed task statements-of-work, schedules, and deliverables. The initial Cost Proposal and assumptions are included in the Appendix.

The MIT and Volpe program coordinators would then work with MIT-CTL and the various participating academic units to identify faculty, staff and potential graduate student research assistants. This process will require several months. After graduate school admissions applications are received (December 15 - January 10), the MIT departments will identify academically qualified students interested in transportation human factors research projects, and forward a copy of their MIT Application for Graduate Admission via CTL to the Volpe Coordinator. The coordinator would evaluate the application with Volpe senior technical staff and corresponding MIT Faculty/staff, and conduct an interview if possible. If a student was judged suitable, and met the citizenship restrictions, the MIT Program Coordinator would arrange through the departments for offers to be made. Offers of support would be contingent on passing a Volpe employee security review (DOT Order 1639.2B) Student decisions would be expected by April 15. If offers were refused, follow up offers could then be made later as required to fill any open slots. As soon as a student accepts, Volpe would initiate a security review so that in the conceivable but unlikely case that a student could not pass the review, the student would have time to obtain alternative support. Projects could be initiated outside of the normal annual cycle, provided suitable student candidates can be identified. Some graduate students enter MIT in February, rather than September. Also, at any given time, there are a number of students already at MIT who are seeking support. Initially the program might involve 4-6 faculty advisors and 6-10 graduate students. We anticipate that as new collaborations will develop and that the program will gradually grow.

One of the longstanding Volpe-MIT research traditions is the luncheon research seminar at Volpe. These meetings facilitate a group identity, and also provide an opportunity for interdisciplinary discussion between Volpe research groups on new issues, and for coordination among participants in the program. The MIT and Volpe Program Coordinators will be responsible for holding Transportation Human Factors Research Program seminars

on a regular (e.g. monthly) basis where collaborating Volpe and MIT researchers can present and discuss their work.

Because of the fact that all students, staff and faculty will be physically working at Volpe, rather than on the MIT Campus, the projects qualify for MIT's off-campus facility and administrative rate. Volpe provides offices, desks, access to Volpe computing facilities and networks, and research equipment and software as required. Volpe manages the 1630.2B security review, badging and provides information security training, safety and other training similar to that of other Volpe employees. It is anticipated that many of the students in the program will be located in Volpe Building 6, the Laboratory for Transportation Human Factors, though other locations at Volpe may be appropriate in individual cases. Meetings between the students and MIT and Project co-supervisors will normally be held at Volpe, not MIT.

SECTION C – DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1 Statement of Work/Specification

The Contractor shall furnish the necessary personnel, services equipment and materials (except as otherwise specified) required to comply with the Statement of Work/ Specifications on site at the Volpe National Transportation Systems Center (Volpe Center), Cambridge, MA.

C.2. Background

The United States Department of Transportation's (DOT) Research and Innovative Technology Administration, Volpe National Transportation Systems Center (Volpe Center), has existing and projected research requirements for which the Government contemplates utilizing the resources of the Contractor in the performance of selected research support tasks. These requirements are listed below in Part C.4. This list is intended to be representative of the areas of work to be carried out under this contract.

C.3. Objective

The objective of this contract is to conduct advanced transportation related research into aspects of transportation technology, policy, and safety consistent with the graduate and undergraduate educational mission of the Contractor. Tasks to be defined will cover all modes of transportation operations and safety-related programs, including, but not limited to, the following general areas:

- Applying computer science techniques to air traffic control, traffic management systems, intelligent transportation systems, transportation system scheduling and planning, and safety enhancement.
- Using test facilities for verification of appropriate application of new technologies to transportation systems problems.
- Using simulators and modeling tools to develop, analyze, and improve transportation safety, policy and planning, including asset management and risk management.
- Applying the expertise and resources of the Volpe/MIT Center for Human Factors Research to conduct research on advanced man-machine interfaces in transportation systems.
- Determining benefit-costs of various human factors safety, security and mobility issues and solutions within and across transportation systems.

C.4. Task Areas

- Under this contract, as firm work requirements materialize within the period of performance set forth herein, within the funds allotted hereunder, and consistent with the terms and conditions of this Contract, the Contracting Officer will direct the Contractor to perform work which falls within one of the Task Areas described below. The direction will be in the form of Task Orders (TOs) issued by the Contracting Officer.

The various types of activities, which the Contractor may be required to perform under this contract, are similar to that in the following Task Areas.

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Task Area 2: Using advanced simulators and modeling tools associated with human-system interaction in air, rail, and highway modes to develop, analyze, and improve transportation safety, security and planning.

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Task Area 5: Use advanced tools for modeling and measuring aircraft and aircraft engine performance and environmental impact as it applies to vehicle or system habitability of the operator and community.

Task Area 6: Utilize powerful computer tools and models developed by the Intelligent Transportation Systems (ITS) program for traffic and congestion analysis including highway and transit operations. At the core of the ITS suite of tools are DynaMIT, a real-time decision-support tool, which provides traffic estimation and prediction capabilities and MITSIMLab, a traffic simulation tool for evaluation and testing of ITS and other traffic management applications, such as incident detection and response, traffic control and traveler information systems. Apply extensive capabilities in the detailed modeling of driving and travel behaviors, such as mode, route and departure time choice, response to route guidance and information, acceleration, lane changing and gap acceptance. Employ a variety of supporting tools and utilities including software that allows DynaMIT and MITSIMLab to communicate and exchange information, tools for calibration of the simulation models, animation Graphical User Interfaces (GUI's) and other tools to generate the required inputs and analysis of the simulation outputs.

Task Area 7: Conduct research on Supply Chain Resilience. The information and expertise developed under this program are important for future supply chain security programs in the areas of transportation and logistics and human decision making.

SECTION C – DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1 Statement of Work/Specification

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The United States Department of Transportation's (DOT) Research and Innovative Technology Administration, Volpe National Transportation Systems Center (Volpe Center), has existing and projected research requirements for which the Government contemplates utilizing the resources of the MIT Center for Transportation and Logistics ("CTL") in the performance of selected research support tasks. These requirements are listed below in Part C.4. This list is intended to be representative of the areas of work to be carried out under this contract.

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- Using test facilities for verification of appropriate application of new technologies to transportation systems problems.
- Using simulators and modeling tools to develop, analyze, and improve transportation safety, policy and planning, including asset management and risk management.
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- Determining benefit-costs of various human factors safety, security and mobility issues and solutions within and across transportation systems.

C.4. Task Areas

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Task Area 7: Conduct research on Supply Chain Resilience. The information and expertise developed under this program are important for future supply chain security programs in the areas of transportation and logistics and human decision making.

C5. Program Administration: MIT Transportation Human Factors Research Program

C5.1 Background

Since it's founding in 1970, adjacent to the MIT campus, the DOT/RITA Volpe center has provided analytical, scientific, and engineering support to the US Department of Transportation. Collaborative relationships naturally arose between MIT faculty and Volpe researchers, managed either via direct contracts between Volpe and MIT administrative units or via a blanket Task Order with the MIT Center for Transportation (now the Center for Transportation and Logistics). Many of these centered in the Transportation Human Factors area. In the late 90s, the CTL Task Order provided $3-5M support annually, much of which went directly to MIT graduate student stipends and tuition. Projects involving graduate students physically working at Volpe qualified for MIT's off-campus overhead rate, lowering the costs of research for Volpe's DOT sponsors, and providing physical space for student offices and labs that was increasingly scarce on the MIT main campus. The arrangement also provided access to unique Volpe facilities in the areas of air traffic control, acoustics and air quality, flight simulators and railroad simulators. Volpe created a Volpe/MIT Transportation Human Factors Laboratory in 1993 in Volpe Building 6, and signed a Cooperative Research and Development Agreement (CRADA) with MIT. The atmosphere was collegial, with students, faculty and Volpe staff working side by side and having frequent joint seminars. Between 1998 and 2003, 13 MIT faculty participated, collaborating with an equal number of Volpe senior collaborators.

MIT and Volpe sought to renew the task order agreement in the spring of 2004. However during the negotiations, it was learned that DOT's post 9/11/2001 security policies required that – like all other Volpe employees - all MIT employees – including graduate student research assistants - working on the task order now had to be US citizens or permanent residents, and have background investigations and training appropriate for handling sensitive information. MIT has had a longstanding policy that foreign faculty, students, staff, and scholars should not be singled out for restrictions in their access to MIT's on-campus educational and research activities. Volpe appealed the DOT policy to the Secretary of Transportation, but was denied. Reluctantly, MIT and Volpe decided not to pursue Task Order renewal, and most tasks were terminated in September 2004. Faculty and students – even those who were US citizens – turned in their Volpe badges and closed their offices. In cases where the research could be completed entirely on the MIT campus, and did not require access to Volpe simulators or other unique facilities, separate contracts were put in place – at the on campus MIT indirect cost rate. Lacking Volpe security credentials, MIT faculty and students could now only visit Volpe colleagues on an escorted basis. The collegiality resulting from daily professional contact ceased.

MIT's longstanding policy against foreign national restrictions for work performed on the MIT campus has been motivated by the desire not to create a "two class" atmosphere among staff – particularly graduate student research assistants. However, MIT has long recognized that there are several federally sponsored programs specifically designed for education of US Citizens, such as NIH and NSF Training Grants, the NASA Graduate Student Researchers

Program, and routinely administers government and private fellowships (e.g. minority fellowships) which carry US Citizenship restrictions, (though they do not necessarily provide access to restricted facilities). MIT's June 2004 policy on Foreign National Restrictions on Research Projects specifically acknowledged that in circumstances where the research enhances US capability and manpower in a particular area of science and engineering, exceptions to foreign national restrictions for training programs could be made. MIT currently has contracts for graduate student support with the Draper Laboratory and the Lincoln laboratory in which only US Citizens or permanent residents are eligible. Students are physically located at Draper and Lincoln, obtain security credentials there, and their work is co-supervised by MIT faculty and Draper/Lincoln staff. However the students attend regular MIT classes, and because of their proximate location to the MIT campus their thesis research is not considered "in absentia". MIT has recognized that background checks and information technology security procedures are necessary and appropriate in specific cases where MIT employees work off-site. MIT considers the Draper and Lincoln fellowship programs compatible with MIT policy on foreign nationals because the students are able to fully participate in both their research group and department activities and can openly present their work to their peers in the same way that students working on campus can. The MIT-Volpe Transportation Human Factors Research Program will operate on a similar model. In late 2005, the operations plan for the new program (described below) was reviewed and approved by the Director of CTL, the MIT Provost, the MIT Research Policy Committee, the Director of MIT's Engineering Systems Division, and the Heads of the Departments of Civil and Environmental Engineering and Aeronautics and Astronautics. This plan now forms the basis for MIT's response to DTRT57-07-R-20012.

C5.2 Transportation Human Factors Research Program Operations

The goal of the proposed new MIT-Volpe Transportation Human Factors research program is to initiate active research collaborations in the areas identified in Section C.3 above. Collaborations would be between Volpe technical staff members, MIT faculty and senior research staff members, and the graduate student(s) they co-supervise. The MIT supervisor's role would not be limited to that of pro-forma thesis reader/signer. The MIT supervisor is expected to actively participate in the genesis and progress of the project, make a commitment to spend time at Volpe, remain in continuing contact with their Volpe collaborator, actively co-supervise the MIT student's work, and provide academic and professional counsel to the student on their roles and responsibilities. The Faculty member will ensure that the student presents their work both at Volpe and in their home Department at MIT, and also at professional conferences and publishes their results in scholarly journals in a timely fashion. Undergraduate students may also participate as 5-10 hr/wk assistants through MIT's Undergraduate Research Opportunities Program (UROP, http://mit.edu/urop/), although they would usually have to work on an escorted basis, since obtaining information security credentials for them is likely impractical.

The proposed Transportation Human Factors Research Program would be limited to faculty, staff, and students collaborating with Volpe researchers on transportation technology, policy and safety issues as relates to human factors. However tasks may cover all modes of transportation. The program would be administered by the MIT Center for Transportation

and Logistics (http://ctl.mit.edu/) in the Engineering Systems Division of MIT's School of Engineering, directed by Prof. Yossi Sheffi, and involving more than 50 faculty and senior staff members from many different departments. Faculty affiliated with other MIT units (e.g. the MIT Media Lab, the Age Lab, the International Center for Air Transportation) can become affiliated with CTL and thereby participate. CTL staff currently includes several program coordinators, an administrative and fiscal officer, and several support staff. The MIT-Volpe Transportation Human Factors Research Program would be under the immediate supervision of two coordinators, one at MIT and one at Volpe. The MIT Program Coordinator will be Dr. Charles M. Oman (Director of MIT's Man Vehicle Laboratory), who has collaborated with Volpe researchers since 1993, and participated in the original CRADA that created the Volpe Transportation Human Factors Laboratory.

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on a regular (e.g. monthly) basis where collaborating Volpe and MIT researchers can present and discuss their work.

Because of the fact that all students, staff and faculty will be physically working at Volpe, rather than on the MIT Campus, the projects qualify for MIT's off-campus facility and administrative rate. Volpe provides offices, desks, access to Volpe computing facilities and networks, and research equipment and software as required. Volpe manages the 1630.2B security review, badging and provides information security training, safety and other training similar to that of other Volpe employees. It is anticipated that many of the students in the program will be located in Volpe Building 6, the Laboratory for Transportation Human Factors, though other locations at Volpe may be appropriate in individual cases. Meetings between the students and MIT and Project co-supervisors will normally be held at Volpe, not MIT.

SOLICITATION, OFFER AND AWARD

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)	RATING	PAGE OF PAGES
		1 | 35

2. CONTRACT NUMBER	3. SOLICITATION NUMBER	4. TYPE OF SOLICITATION	5. DATE ISSUED	6. REQUISITION/PURCHASE NUMBER
	DTRT57-07-R-20012	☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP)	01/26/2007	4G-7002

7. ISSUED BY	CODE	8. ADDRESS OFFER TO (If other than Item 7)
U.S. DOT/RITA/Volpe Center Contracts & Small Business Programs 55 Broadway RTV-6D2 Cambridge MA 02142-1001	RTV-6D2	

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and 2 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if hand carried, in the depository located in SEE BLOCK #7 until 1500 ET (Hour) local time 02/26/2007 (Date)

CAUTION: LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE (NO COLLECT CALLS) AREA CODE	NUMBER	EXT.	C. E-MAIL ADDRESS
	Kathleen Regan	617	494-3485		Regan@volpe.dot.gov

11. TABLE OF CONTENTS

(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
		PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES	
☒	A	SOLICITATION/CONTRACT FORM	1	☒	I	CONTRACT CLAUSES	23
☒	B	SUPPLIES OR SERVICES AND PRICES/COSTS	3			PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.	
☒	C	DESCRIPTION/SPECS./WORK STATEMENT	4	☒	J	LIST OF ATTACHMENTS	28
☒	D	PACKAGING AND MARKING	6			PART IV - REPRESENTATIONS AND INSTRUCTIONS	
☒	E	INSPECTION AND ACCEPTANCE	7	☒	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	29
☒	F	DELIVERIES OR PERFORMANCE	8				
☒	G	CONTRACT ADMINISTRATION DATA	10	☒	L	INSTRS., CONDS., AND NOTICES TO OFFERORS	30
☒	H	SPECIAL CONTRACT REQUIREMENTS	16	☒	M	EVALUATION FACTORS FOR AWARD	35

OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52.232.8)	10 CALENDAR DAYS (%)	20 CALENDAR DAYS (%)	30 CALENDAR DAYS (%)	CALENDAR DAYS (%)

14. ACKNOWLEDGEMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated):	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

15A. NAME AND ADDRESS OF OFFEROR	CODE	FACILITY	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)

15B. TELEPHONE NUMBER AREA CODE	NUMBER	EXT.	15C. CHECK IF REMITTANCE ADDRESS ☐ IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE.	17. SIGNATURE	18. OFFER DATE

AWARD (To be completed by government)

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT	21. ACCOUNTING AND APPROPRIATION

22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: ☐ 10 U.S.C. 2304 (c) ( ) ☐ 41 U.S.C. 253 (c) ( )	23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)	ITEM

24. ADMINISTERED BY (If other than Item 7)	CODE	25. PAYMENT WILL BE MADE BY	CODE

26. NAME OF CONTRACTING OFFICER (Type or print)	27. UNITED STATES OF AMERICA (Signature of Contracting Officer)	28. AWARD DATE
Kathleen Regan		

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Delivery Location Code: VNTSC U.S. DOT/RITA/Volpe Center 125 Munroe Street Receiving Dock Cambridge MA 02142-1001 US FOB: Destination				
0001	The objective of this contract is to conduct advance transportation related research for aspects of transportation technology, policy, and safety. Tasks to be defined and assigned to MIT/CTL will cover all modes of transportation operations and safety-related programs as it relates to human factors.				

SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS

B.1 Total Estimated Cost (Dec. 1998)

The Contractor shall provide the necessary personnel, facilities, services, equipment and materials to perform those activities that are as specified under Section C - Statement of Work. This includes reports and other products.

The estimated total cost is $_____

(Completed at Time of Award)

B.2 Contract Limitations

The maximum value of all Task Orders issued under this contract shall not exceed $4,000,000.

Minimum Guarantee: The guaranteed minimum value of this contract is $2,500.00.

B.3 Type of Contract

The Government contemplates award of a Cost Reimbursement--No Fee, contract resulting from this solicitation.

SECTION C – DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1 Statement of Work/Specification

The Contractor shall furnish the necessary personnel, facilities, services, equipment and materials (except as otherwise specified) required to comply with the Statement of Work/Specifications.

C.2. Background

The United States Department of Transportation's (DOT) Research and Innovative Technology Administration, Volpe National Transportation Systems Center (Volpe Center), has existing and projected research requirements for which the Government contemplates utilizing the resources of the Contractor in the performance of selected research support tasks. These requirements are listed below in Part C.4. This list is intended to be representative of the areas of work to be carried out under this contract.

C.3. Objective

The objective of this contract is to conduct advanced transportation related research into aspects of transportation technology, policy, and safety consistent with the graduate and undergraduate educational mission of the Contractor. Tasks to be defined will cover all modes of transportation operations and safety-related programs, including, but not limited to, the following general areas:

- Applying computer science techniques to air traffic control, traffic management systems, intelligent transportation systems, transportation system scheduling and planning, and safety enhancement.
- Using test facilities for verification of appropriate application of new technologies to transportation systems problems.
- Using simulators and modeling tools to develop, analyze, and improve transportation safety, policy and planning, including asset management and risk management.
- Applying the expertise and resources of the Volpe/MIT Center for Human Factors Research to conduct research on advanced man-machine interfaces in transportation systems.
- Determining benefit-costs of various human factors safety, security and mobility issues and solutions within and across transportation systems.

C.4. Task Areas

- Under this contract, as firm work requirements materialize within the period of performance set forth herein, within the funds allotted hereunder, and consistent with the terms and conditions of this Contract, the Contracting Officer will direct the Contractor to perform work which falls within one of the Task Areas described below. The direction will be in the form of Task Orders (TOs) issued by the Contracting Officer.

The various types of activities, which the Contractor may be required to perform under this contract, are similar to that in the following Task Areas.

Task Area 1: Adapt and comprehensively test advanced computer techniques for automating air traffic control (ATC) systems and performing other ATC tasks to determine their potential for implementation into the Federal Aviation Administration's (FAA) and the National Aeronautic and Space Administration's (NASA) operational ATC system. Utilize advanced test facilities such as the International Center for Air Transportation and the Center for Electromagnetic Research to perform research studies and simulation in the areas of traffic management systems, transportation system scheduling and planning, and safety enhancement.

Task Area 2: Using advanced simulators and modeling tools associated with human-system interaction in air, rail, and highway modes to develop, analyze, and improve transportation safety, security and planning.

Task Area 3: Employ state-of-the-art software to conduct research on transportation-related technologies (e.g. electronic braking, positive train control, etc.).

Task Area 4: Applying the resources and advanced technology in the realm of computer-human interfaces and conducting research in the area of traffic management, controller/pilot situational awareness, and enhanced safety.

Task Area 5: Use advanced tools for modeling and measuring aircraft and aircraft engine performance and environmental impact as it applies to vehicle or system habitability of the operator and community.

Task Area 6: Utilize powerful computer tools and models developed by the Intelligent Transportation Systems (ITS) program for traffic and congestion analysis including highway and transit operations. At the core of the ITS suite of tools are DynaMIT, a real-time decision-support tool, which provides traffic estimation and prediction capabilities and MITSIMLab, a traffic simulation tool for evaluation and testing of ITS and other traffic management applications, such as incident detection and response, traffic control and traveler information systems. Apply extensive capabilities in the detailed modeling of driving and travel behaviors, such as mode, route and departure time choice, response to route guidance and information, acceleration, lane changing and gap acceptance. Employ a variety of supporting tools and utilities including software that allows DynaMIT and MITSIMLab to communicate and exchange information, tools for calibration of the simulation models, animation Graphical User Interfaces (GUI's) and other tools to generate the required inputs and analysis of the simulation outputs.

Task Area 7: Conduct research on Supply Chain Resilience. The information and expertise developed under this program are important for future supply chain security programs in the areas of transportation and logistics and human decision making.

U.S. Census Bureau

2002 NAICS Definitions

541710 Research and Development in the Physical, Engineering, and Life Sciences

This industry comprises establishments primarily engaged in conducting research and experimental development in the physical, engineering, and life sciences, such as agriculture, electronics, environmental, biology, botany, biotechnology, computers, chemistry, food, fisheries, forests, geology, health, mathematics, medicine, oceanography, pharmacy, physics, veterinary, and other allied subjects.

Cross-References. Establishments primarily engaged in--

- Providing physical, chemical, or other analytical testing services (except medical or veterinary)--are classified in Industry 541380, Testing Laboratories;
- Providing medical laboratory testing for humans--are classified in U.S. Industry 621511, Medical Laboratories; and
- Providing veterinary testing services--are classified in Industry 541940, Veterinary Services.

Go to: No change 1997 to 2002 | 2002 NAICS to 1987 SIC | 1997 Economic Census | Bridge Between 1997 NAICS and SIC

2002 NAICS	1997 NAICS	1987 SIC	Corresponding Index Entries
541710	541710		Agriculture research and development laboratories or services
541710	541710		Bacteriological research and development laboratories or services
541710	541710		Biology research and development laboratories or services
541710	541710		Biotechnology research and development laboratories or services
541710	541710		Botany research and development laboratories or services
541710	541710		Cancer research laboratories or services
541710	541710		Cerebral palsy research laboratories or services
541710	541710		Chemical research and development laboratories or services
541710	541710		Computer and related hardware research and development laboratories or services
541710	541710		Dental research and development laboratories or services
541710	541710		Electronic research and development laboratories or services
541710	541710		Engineering research and development laboratories or services
541710	541710		Entomological research and development laboratories or services
541710	541710		Environmental research and development laboratories or services
541710	541710		Experimental farms
541710	541710		Fisheries research and development laboratories or services

541710	541710		Food research and development laboratories or services
541710	541710		Forestry research and development laboratories or services
541710	541710		Genetics research and development laboratories or services
541710	541710		Geological research and development laboratories or services
541710	541710	3764	Guided missile and space vehicle engine research and development
541710	541710	3769	Guided missile and space vehicle parts (except engines) research and development
541710	541710		Health research and development laboratories or services
541710	541710		Industrial research and development laboratories or services
541710	541710		Life sciences research and development laboratories or services
541710	541710		Mathematics research and development laboratories or services
541710	541710		Medical research and development laboratories or services
541710	541710	8733	Observatories, research institutions
541710	541710		Oceanographic research and development laboratories or services
541710	541710		Physical science research and development laboratories or services
541710	541710		Physics research and development laboratories or services
541710	541710		Veterinary research and development laboratories or services

Page Last Modified: May 05, 2003

Owner:	Orin D Cook
Number of Vendors Solicited:	0
Number of Vendors Responded:	0
Requisition Number:	4G-7002
Date Issued:	01/26/2007
Type of Solicitation:	5 - RFP
Solicitation Procedure(FPDS):	L. Other than Full and Open Competition
Anticipated Type of Contract(FPDS):	Indefinite-quantity
DO/DPAS Rating:	(None)
Depository:	SEE BLOCK #7
NAICS Code:	541519
Size Standard:	$23.00
Buyer:	Kathleen Regan
Contracting Officer:	Kathleen Regan
Primary Product / Service Code:	(None)
Primary Product / Service Code Description:	(None)
SDB %:	(None)
HUB Zone %:	(None)

Admin Office Code:	RTV-6D2
Name:	U.S. DOT/RITA/Volpe Center
Address:	55 Broadway RTV-6D2
City:	Cambridge
State:	MA
Zip:	02142-1001
Country:	US

Issuing Office Code:	RTV-6D2
Name:	U.S. DOT/RITA/Volpe Center
Address:	Contracts & Small Business Programs 55 Broadway RTV-6D2
City:	Cambridge
State:	MA
Zip:	02142-1001
Country:	US

Responses Due

Date:	02/26/2007
Time:	1500
Time Zone:	ET
Copies:	2

Synopsis

Synopsized: Yes
Date: 01/04/2007
Transmitted Date: 01/04/2007
Published Date: 01/04/2007

A --Transportation Related Research

General Information

Document Type:	Presolicitation Notice
Solicitation Number:	DTRT57-07-R-20012
Posted Date:	Jan 04, 2007
Original Response Date:	Jan 19, 2007
Current Response Date:	Jan 19, 2007
Original Archive Date:	Apr 19, 2007
Current Archive Date:	Apr 19, 2007
Classification Code:	A -- Research & Development

Contracting Office Address

55 Broadway; Cambridge, MA 02142

Description

The U.S. Department of Transportation, Research and Innovation Technology Administration, John A. Volpe National Transportation Systems Center (Volpe Center) intends to issue a non-competitive request for proposal for an indefinite delivery indefinite quantity, Cost Contract to the Massachusetts Institute of Technology (MIT) Center for Transportation and Logistics (CTL) in accordance with Federal Acquisition Regulation (FAR) 6.302-1, Only one responsible source and no other supplies or services will satisfy agency requirements. The Volpe Center intends to procure transportation related research services; specific services will include Human Factors research, Air Traffic Control Operations Human Factors, Information Technology to solve complex transportation system problems, Research on Transportation-Related Materials with particular emphasis on rail transportation and Intelligent Transportation Systems applicable to land-based advanced traffic management systems. Program requirements are to be defined and

assigned to MIT/CTL covering all modes of transportation operations and safety-related programs. The Volpe Center intends to utilize the below five MIT/CTL laboratories to satisfy program requirements in the area of human factors research: MIT Center for Human Factors Research in Transportation, Manned Vehicle Laboratory (MLV), MIT Media Laboratory, MIT Center for Transportation and Logistics (CTL) and MIT Operations Research Center (ORC). Interested parties must provide written documentation that it has the ability to: work with all of the above multiple program requirements as part of a project, integrate the span of services amongst the multiple program requirements identified above as part of an individual project, and demonstrate that it has performed in the above multiple program requirement technical areas. This notice of intent is not a request for proposal, and no Request for Proposal will be available. This notice does not constitute a solicitation and is not to be construed as a commitment by the Government. Interested parties must respond in writing within 15 calendar days of publication to the above named contracting individual. Responses received after 15 calendar days or without the required documentation will be considered non-responsive and will not be considered. Responses received will be considered solely for the purpose of determining whether or not to conduct this procurement on a competitive basis. A determination by the Government not to compete this requirement on a full and open competitive basis, based upon responses received to this synopsis, is solely with the discretion of the Government. The Government will not pay for any effort expended in responding to this notice. No verbal communications will be acknowledged or accepted. For Minority, Women-Owned, and Disadvantage Business Enterprises; The Department of Transportation (DOT), Office of Small Business and Disadvantage Business Utilization (OSDBU) has a program to assist minority, women-owned and disadvantaged business enterprises to acquire short-term working capital assistance for transportation-related contracts. Loans are available under the DOT Short Term Lending Program (STLP) at prime interest rates to provide accounts receivable financing. The maximum line of credit is $500,000. For further information and applicable forms concerning the STLP, please call the OSDBU at (800) 532-1169.

Point of Contact

Point of Contact -Joel Taylor, Contract Specialist, 617-494-2670

Email your questions to Contract Specialist at Joel.Taylor@volpe.dot.gov

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Transportation Related Research

Part
U.S. Government Procurements

Subpart
services

Classification Code
A -- Research & Development

Office Address
DOT/RITA/VOLPE National Transportation Systems Center, 55 Broadway, Kendall Square, Cambridge, MA 02142

Solicitation No.
DTRT57-07-R-20012

Response Date
19-JAN-07

POC
Joel Taylor
Contract Specialist
617-494-2670

Description
The U.S. Department of Transportation, Research and Innovation Technology Administration, John A. Volpe National Transportation Systems Center (Volpe Center) intends to issue a non-competitive request for proposal for an indefinite delivery indefinite quantity, Cost Contract to the Massachusetts Institute of Technology (MIT) Center for Transportation and Logistics (CTL) in accordance with Federal Acquisition Regulation (FAR) 6.302-1, Only one responsible source and no other supplies or services will satisfy agency requirements. The Volpe Center intends to procure transportation related research services; specific services will include Human Factors research, Air Traffic Control Operations Human Factors, Information Technology to solve complex transportation system problems, Research on Transportation-Related Materials with particular emphasis on rail transportation and Intelligent Transportation Systems applicable to land-based advanced traffic management systems. Program requirements are to be defined and assigned to MIT/CTL covering all modes of transportation operations and safety-related programs. The Volpe Center intends to utilize the below five MIT/CTL laboratories to satisfy program requirements in the area of human factors research: MIT Center for Human Factors Research in Transportation, Manned Vehicle Laboratory (MLV), MIT Media Laboratory, MIT Center for Transportation and Logistics (CTL) and MIT Operations Research Center (ORC). Interested parties must provide written documentation that it has the ability to: work with all of the above multiple program requirements as part of a project, integrate the span of services amongst the multiple program requirements identified above as part of an individual project, and demonstrate that it has performed in the above multiple program requirement technical areas. This notice of intent is not a request for proposal, and no Request for Proposal will be available. This notice does not constitute a solicitation and is not to be construed as a commitment by the Government. Interested parties must respond in writing within 15 calendar days of publication to the above named contracting individual. Responses received after 15 calendar days or without the required documentation will be considered non-responsive and will not be

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Contract Specialist

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DOT

Business Opportunities

SOL: DTRT57-06-SS-0450

Searching Archived Documents (Archived documents are available from the search page).

Agency : Department of Transportation
Office : Research and Innovative Technology Administration
Location : Volpe National Transportation Systems Center

Solicitation number : DTRT57-06-SS-0450
Title : A --Sources Sought Synopsis Research in Transportation, Safety and Logistics Programs

Synopsis - Posted on Jun 28, 2006

[SEARCH synopses] [Procurement Reference Library]

Vendors
Federal Business Opportunities

A --Sources Sought Synopsis Research in Transportation, Safety and Logistics Programs

General Information

Document Type:	Sources Sought Notice
Solicitation Number:	DTRT57-06-SS-0450
Posted Date:	Jun 28, 2006
Archive Date:	Sep 26, 2006
Original Response Date:	Jul 06, 2006
Current Response Date:	Jul 06, 2006
Classification Code:	A -- Research & Development
SetAsides:	
Naics Code:	N/A

Contracting Office Address

55 Broadway; Cambridge, MA 02142

Description

This synopsis is reissued to present the correct response date of 07/06/2006 FOR (DTRT57-06-SS-0449) Description The Volpe National Transportation Systems Center intends to award a five-year task order contract to support research in transportation, safety, and logistics related programs with respect to modeling, technology, policy, conservation, security, and safety. Support will involve: application of advanced/unique computer techniques to air traffic control, air and surface traffic management systems, transportation system scheduling and planning, and safety enhancement; use of advanced test facilities for verification of the appropriate application of new technologies to transportation systems problems; use of advanced simulators and modeling tools to develop, analyze, and improve transportation safety and planning; development and application of state-of-the-art communications and surveillance technologies for improving transportation situational awareness; use of software and modeling tools to mitigate transportation noise and air quality impacts; and application of state-of-the-art expertise and resources to conduct research on advanced man-machine interfaces in transportation systems and the use information

technology to enhance productivity with particular attention to transportation and logistics. Interested offerors must submit a capabilities package with two copies demonstrating their sustained abilities in each of the following transportation areas: capability to rapidly simulate the operations of a specific airport and provide an assessment of any operational changes on the airport's capacity and delays; capability to perform studies and tests in support of various spectrum/frequency issues critical to air traffic control operations; capability to model travel behavior and security measures; capability to model the real-time response of traffic on a highway network to incidents and traveler information; capability to perform quantitative research on human factors in advanced guideway systems and railroad operations; capability to test human subjects at simulated high speeds; capability to conduct research in the simulation and investigation of pilot performance using advanced concepts; capability to perform shakedown stress estimation using software in order to conduct research on transportation-related materials; capability to measure fixed-wing aircraft and rotor-craft noise; capability to measure aircraft air emissions and dispersion; capability to reduce and analyze acoustics-related and air emissions-related data; capability to develop codes and algorithms for acoustics and emissions computer models; capability to model aircraft performance; capability to model airport noise; capability to model air pollution dispersion; and capability to apply sophisticated visual problem solving and rapid prototyping skills to the problems of imaging visual complexity and the capability to assess and employ advanced techniques in information technology to improve safety, security and efficiency in transportation and logistics. Interested parties must respond to this announcement in writing within 15 days of publication. Telephonic requests will not be honored. For Minority, Women-Owned, and Disadvantaged Business Enterprises: The Department of Transportation (DOT), Office of Small Business and Disadvantaged Business Utilization (OSDBU) has a program to assist minority, women-owned, and disadvantaged business enterprises to acquire short-term working capital assistance for transportation-related contracts. Loans are available under the DOT Short Term Lending Program (STLP) at prime interest rates to provide accounts receivable financing. The maximum line of credit is $500,000. For further information and applicable forms concerning the STLP, please call the OSDBU at (800) 532-1169.

Point of Contact

Point of Contact -Joel Taylor, Contract Specialist, 617-494-2670

Email your questions to Contract Specialist at Joel.Taylor@volpe.dot.gov

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Vendors
Federal Business Opportunities

DOT

Business Opportunities

SOL: DTRT57-06-SS-0449

Searching Archived Documents (Archived documents are available from the search page).

Agency : Department of Transportation
Office : Research and Innovative Technology Administration
Location : Volpe National Transportation Systems Center

Solicitation number : DTRT57-06-SS-0449
Title : A --Research in Transportation, Safety and Logistics Programs

Synopsis - Posted on Jun 21, 2006

[SEARCH synopses] [Procurement Reference Library]

A --Research in Transportation, Safety and Logistics Programs

General Information

Document Type:	Sources Sought Notice
Solicitation Number:	DTRT57-06-SS-0449
Posted Date:	Jun 21, 2006
Archive Date:	Sep 19, 2006
Original Response Date:	Jul 15, 2006
Current Response Date:	Jul 15, 2006
Classification Code:	A -- Research & Development
SetAsides:	
Naics Code:	N/A

Contracting Office Address

55 Broadway; Cambridge, MA 02142

Description

The Volpe National Transportation Systems Center intends to award a five-year task order contract to support research in transportation, safety, and logistics related programs with respect to modeling, technology, policy, conservation, security, and safety. Support will involve: application of advanced/unique computer techniques to air traffic control, air and surface traffic management systems, transportation system scheduling and planning, and safety enhancement; use of advanced test facilities for verification of the appropriate application of new technologies to transportation systems problems; use of advanced simulators and modeling tools to develop, analyze, and improve transportation safety and planning; development and application of state-of-the-art communications and surveillance technologies for improving transportation situational awareness; use of software and modeling tools to mitigate transportation noise and air quality impacts; and application of state-of-the-art expertise and resources to conduct research on advanced man-machine interfaces in transportation systems and the use information technology to enhance productivity with particular attention to transportation and logistics. Interested

offerors must submit a capabilities package with two copies demonstrating their sustained abilities in each of the following transportation areas: capability to rapidly simulate the operations of a specific airport and provide an assessment of any operational changes on the airport's capacity and delays; capability to perform studies and tests in support of various spectrum/frequency issues critical to air traffic control operations; capability to model travel behavior and security measures; capability to model the real-time response of traffic on a highway network to incidents and traveler information; capability to perform quantitative research on human factors in advanced guideway systems and railroad operations; capability to test human subjects at simulated high speeds; capability to conduct research in the simulation and investigation of pilot performance using advanced concepts; capability to perform shakedown stress estimation using software in order to conduct research on transportation-related materials; capability to measure fixed-wing aircraft and rotor-craft noise; capability to measure aircraft air emissions and dispersion; capability to reduce and analyze acoustics-related and air emissions-related data; capability to develop codes and algorithms for acoustics and emissions computer models; capability to model aircraft performance; capability to model airport noise; capability to model air pollution dispersion; and capability to apply sophisticated visual problem solving and rapid prototyping skills to the problems of imaging visual complexity and the capability to assess and employ advanced techniques in information technology to improve safety, security and efficiency in transportation and logistics. Interested parties must respond to this announcement in writing within 15 days of publication. Telephonic requests will not be honored. For Minority, Women-Owned, and Disadvantaged Business Enterprises: The Department of Transportation (DOT), Office of Small Business and Disadvantaged Business Utilization (OSDBU) has a program to assist minority, women-owned, and disadvantaged business enterprises to acquire short-term working capital assistance for transportation-related contracts. Loans are available under the DOT Short Term Lending Program (STLP) at prime interest rates to provide accounts receivable financing. The maximum line of credit is $500,000. For further information and applicable forms concerning the STLP, please call the OSDBU at (800) 532-1169.

Point of Contact

Point of Contact -Joel Taylor, Contract Specialist, 617-494-2670

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DOT-Specific Numbered Notes

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Procurement Request 4G-7002

DEPARTMENT OF TRANSPORTATION
RESEARCH AND INNOVATIVE TECHNOLOGY ADMINISTRATION
VOLPE NATIONAL TRANSPORTATION SYSTEMS CENTER
OFFICE OF AVIATION PROGRAMS
Human Factors Division, RTV-4G

JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION

PART I – TECHNICAL SUPPORTING DATA

Recommend conducting negotiations with the Massachusetts Institute of Technology (MIT) Center for Transportation and Logistics (CTL) on a noncompetitive basis and awarding a Indefinite Delivery Indefinite Quantity (IDIQ) task order contract in the amount of $4,000,000. Supporting data for this recommendation follows:

A. Description of Supplies/Services

The Volpe Center intends to acquire transportation related research services from CTL. Specific services will include Human Factors research, Air Traffic Control Operations Human Factors, Information Technology to solve complex transportation system problems, Research on Transportation-Related Materials with particular emphasis on rail transportation and Intelligent Transportation Systems applicable to land-based advanced traffic management systems.

B. Background

The Department of Transportation's (DOT) Volpe National Transportation Systems Center (Volpe Center) has major responsibility for several DOT and Department of Defense (DOD) transportation research, analysis, and development programs. MIT/CTL is supported by approximately 60 faculty members from 11 academic departments, selected research staff members, and graduate students. MIT faculty, staff, and students affiliated with CTL are organized into groups and laboratory units. Each group and laboratory unit has particular expertise in specific transportation modes:

- Human Factors: includes human factors (workforce aging issues, man-machine interfaces, human performance, stress, information processing, workload stress fatigue issues) research applicable to improving safety and mobility in all transportation modes on both advanced and traditional transportation.
- Air Traffic Control Operations: includes research related to global communications and positioning systems, spectrum/frequency issues, international air traffic management systems, real-time vehicle diagnostic systems, human-computer

interface, noise and air quality measurement and forecasting, as well as other safety and efficiency-related air transportation/air traffic control operation systems.

- Information Technology: includes the application of advanced techniques and new information technologies to solve complex transportation system problems.
- Research on Transportation-Related Materials: includes research and development into crashworthiness with particular emphasis on rail transportation.
- Intelligent Transportation Systems: includes research applicable to land-based advanced traffic management systems.

The Volpe Center has used the services of MIT's CTL to obtain expertise in transportation research since 1991. The types of research services that MIT has provided in transportation research, has changed over time, which has resulted in the addition and deletion of various laboratories. The five major areas identified above represent the majority of tasks that are expected to be performed by MIT over the life of this proposed sole source contract.

C. Market Research

A "Sources Sought Notice" was announced at the Federal Business Opportunities (www.eps.gov and fedbizopps.gov) websites on June 23, 2006. At the time that sources sought was issued the requirements included 12 labs to be provided by MIT/CTL. The Sources Sought Notice invited sources deeming themselves capable of satisfying the requirements to provide the Government with information on their technical capabilities. The most critical areas of need were emphasized as listed below:

1) Performing quantitative research on human factors in advanced guideway systems;
2) Testing human subjects at simulated high speeds;
3) Conducting research in the simulation and investigation of pilot performance using advanced concepts;
4) Performing shakedown stress estimation software to conduct research on transportation-related materials;
5) Rapidly simulating the operations of a specific airport and providing an assessment of any operational changes on the airport's capacity and delays;
6) Performing studies and tests in support of various spectrum/frequency issues critical to air traffic control operations;
7) Applying sophisticated visual problem solving and rapid prototyping skills to the problems of imaging visual complexity; and
8) Employing advanced techniques in information technology to improve safety and efficiency in transportation.

The following firms responded to the Sources Sought:

1. [redacted]
2. [redacted]
3. [redacted]
4. [redacted]

5. [redacted]
6. [redacted]
7. [redacted]
8. [redacted]
9. [redacted]
10. [redacted]
11. [redacted]
12. [redacted]

The responses were evaluated by a group of six (6) reviewers with relevant expertise. None of the twelve responses were able to meet all of the capabilities as stated in the source sought. Some of the responses simply restated the capabilities in the announcement but provided no support documentation that they have performed in these technical areas. One firm (Wyle Laboratories) indicated that it could perform limited aspects of the Government's anticipated requirements.

The full technical analysis of the responses is included in the file and available for review.

D. Circumstances Requiring the Use of Other than Full and Open Competition

MIT/CTL is the only known source to fulfill the complete program needs as identified in paragraph B. The five laboratories identified below have unique capabilities and will be utilized to satisfy the Volpe Center's program needs in the area of human factors research:

- Volpe/MIT Center for Human Factors Research in Transportation is the only entity in the United States performing quantitative research on human factors (e.g. human performance, stress, information processing) in advanced vehicle, dispatching and guideway systems. Access to the world-renowned expertise residing in this laboratory provides the Volpe Center with capabilities that are vital in maintaining the United States' position in advanced transportation systems. This laboratory has developed the only research facility that allows testing of human subjects at simulated speeds in excess of 175 m.p.h. The simulation technologies, procedures, and computer programs embodied in this advanced cab simulator are required for the conduct of Volpe Center research in areas such as Federal Railroad Administration-sponsored studies of operator stress and fatigue in high speed rail.

- Manned Vehicle Laboratory (MLV) provides unique research capabilities in the simulation and investigation of pilot performance in advanced concepts. The MLV has unique simulation capabilities that have been established through its decades of sole participation in NASA's manned space flight programs in this area. An example is the MLV aviation turbulence simulation model which is vital to the realism of the Volpe Center Light Twin Cockpit Simulator.

- MIT Media Laboratory is the leading innovator research organization on Computer-Human Interfaces (CHI). As an example of its advanced research, the Media Laboratory has developed unique displays that provide three-dimensional depictions of air traffic to increase controller situational awareness. Another example is the development of the ultrasonic spotlight of sound that can be used to reduce community noise impact at rail grade crossings. The Media Laboratory possesses unique capabilities to apply sophisticated visual problem solving as well as rapid prototyping skills to the problems of managing visual complexity; e.g., prototype of a future railroad dispatch and ATC workstations. These unique capabilities and services are vital to the Volpe Center's Human Factors Research program.

- MIT Center for Transportation and Logistics (CTL), in MIT's Department of Civil and Environmental Engineering (CEEE) and MIT's Engineering Systems Division is the world's leading center for research in transportation related policy and supply chain management and logistics. The Center's research program spans every aspect of supply chain management and involves important areas such as Intelligent Transportation Systems and demand management. A critical component of this Center for our needs is the Age Lab which deals with human factors research issues involving aging drivers and commercial vehicle operators.

- MIT Operations Research Center (ORC) draws faculty from 8 departments and several schools at MIT. This ORC is uniquely positioned to provide the critical element of operations research to the other Labs. Expertise includes mathematical programming and combinatorial optimization, cluster analysis, network flow algorithms, network design, queuing theory and queuing networks, and risk analysis.

MIT/CTL also provides the unique opportunity to integrate the span of services amongst the multiple labs identified above as part of an individual project. The ability to work with multiple labs as part of a project is only possible with MIT. Volpe Center projects often require cross-functional skill sets and expertise that comes from a variety of technical specialties. In past work with MIT, the Volpe Center has needed to work with multiple labs to complete project work successfully. For example, Volpe Center staff has worked simultaneously with the Man-Vehicle Lab and the Media Lab to assess the impact of fatigue. The ability to work with multiple labs creates synergies. Volpe Center staff frequently act as system integrators in the design of transportation systems for the U.S. Department of Transportation.

E. Steps to Foster Competition

Based on the results of the sources sought synopsis and an examination of the Government's requirements for transportation research, the number of labs being procured on a sole source to MIT/CTL, is being reduced from 12 labs to 5 labs. The Government intends to issue a competitive procurement to acquire the services of a contractor to perform the remaining areas of transportation related research.