



U.S. Department of Energy Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: Georgia Tech Research Corporation (GA Tech) - Network Performance Monitoring and Distributed Simulation to Improve Transportation Energy Efficiency

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Atlanta, GA and Dallas, TX

Proposed Action Description:

Funding will support development and testing of a system model and control architecture that combines real-time analysis of transportation network data with distributed simulation modeling to provide drivers with information designed to reduce energy consumption as they travel. The software's system model will use real-time traffic monitoring of the Atlanta metro area provided by regional transportation systems, origin-destination patterns, and highway speeds collected from cellular networks and smartphone applications. In addition, the system architecture will communicate with users via a smartphone application and provide suggestions for altering departure times, routes, and/or modes of transportation to reduce energy consumption without increasing the time or cost of a trip. If successful, development of a novel system model and architecture that dynamically simulates urban transportation networks would demonstrate the level of energy efficiency gains that can be accomplished through network optimization approaches.

Research and development activities will be conducted in GA Tech's laboratory facility located in Atlanta, GA. Airsage, Inc.'s, Epsilon Data Management, LLC's, and Southern Methodist University's roles in the proposed project will be limited to theoretical and computer simulation work performed in their office facilities located in Atlanta, GA and Dallas, TX. Any behavioral research/testing of a proof of concept system model and architecture performed by GA Tech will be subject first to the review and approval of the university's Institutional Review Board (IRB), and will comply with the requirements of: (1) DOE Order No. 443.1B (Protection of Human Research Subjects); (2) 10 C.F.R. Part 745; and (3) 45 C.F.R. Part 46.

Categorical Exclusion(s) Applied:

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of 10 CFR Part 1021.

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D.

To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, ~~unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.~~

There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal.

The proposal has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer:

Date Determined: 12/1/2015