

Haptic Seat for Fuel Economy

Engineers at The Savannah River National Laboratory (SRNL) are working on development of a new method for providing feedback to drivers of vehicles in order to maximize fuel efficiency through improved driving habits.



Background

Vehicle systems today provide feedback to drivers on a wide variety of vehicle or driver characteristics. The majority of the systems currently employed are visual systems which provide data on an already crowded instrument gauge in the dashboard. Some of the information provided includes: tire pressure, radio and cell phone controls, trip monitors, and fuel consumption. In order to rely on these systems for information the drive has to consciously take their eyes off the road to view the data, adding to the long list of distractions already confronting today's drivers. Using a seat so equipped a driver can receive real time information as to fuel economy without having to divert attention from traffic and road conditions.

Through the use of a haptic device embedded in a vehicle driver's seat or support structure, a driver can receive continual feedback due to their constant contact with the seat. The feedback delivered to the driver can be in the way of vibrations or in the form of a speaker in which amplitude, frequency, and waveform could be adjusted and tuned. Because of the ability to fine tune the signals, it would be possible to provide feedback on multiple driver/vehicle parameters beyond merely fuel economy, limited only by the operator's ability to discern the differences. For instance, an unpleasant vibration could be provided when the fuel economy is poor and the driving style continues or, if fuel economy worsens, the vibration could change in frequency or amplitude to prompt a change in driving performance.

While the system is designed to help mitigate undesirable behavior in driving habits, it can also indicate preferred behavior by delivering pleasing feedback to the operator of the vehicle.

at a glance

- provides continuous feedback
- helps maximize fuel economy
- adaptable for many feedback applications
- non-distractive
- patent pending

Haptic Seat for Improved Fuel Economy

Stage of Development

This technology is in early stage research and development in collaboration with a major university involved in progressive automotive research and development activities. A patent has been filed on this invention with the U. S. Patent and Trademark Office.



Technology transfer

The Savannah River National Laboratory (SRNL) is the U.S. Department of Energy's (DOE) applied research and development laboratory at the Savannah River Site (SRS). With its wide spectrum and expertise in areas such as homeland security, hydrogen technology, materials, sensors, and environmental science, SRNL's cutting edge technology delivers high dividends to its customers.

The management and operating contractor for SRS and SRNL is Savannah River Nuclear Solutions, LLC. SRNS is responsible for transferring its technologies to the private sector so that these technologies may have the collateral benefit of enhancing U.S. economic competitiveness.

Partnering opportunities

SRNS invites interested companies with proven capabilities in this area of expertise to develop commercial applications for this process under a funds-in cooperative research and development agreement (CRADA) or licensing agreement. Qualifications should include past experience at bringing similar products to market, reasonable schedule for product launch, sufficient manufacturing capacity, established distribution networks, and evidence of sufficient financial resources for product development and launch. Companies interested in licensing will need to submit a business plan setting forth company qualifications, strategies, activities, and milestones for commercializing this invention.

for more information

Dale Haas, Commercialization Manager
Savannah River National Laboratory
Bldg. 773-41A, Rm. 241, Aiken, SC 29808
Phone: 803-725-4185
Fax: 803-725-4988
E-mail: dale.haas@srnl.doe.gov