



# Environmentally Friendly Navigation Techniques

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## PATENT STATUS

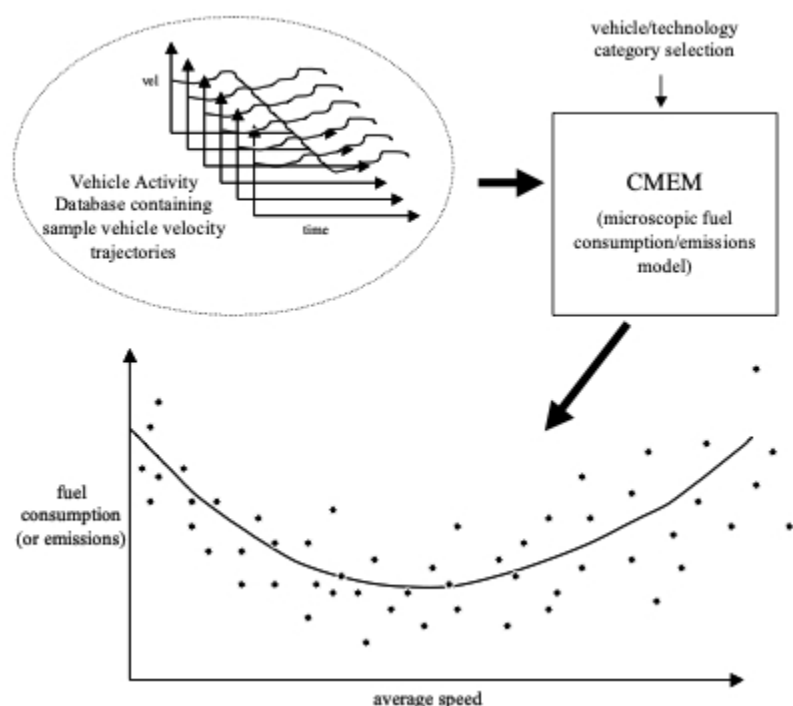
Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,255,152	08/28/2012	2009-174

## OTHER INFORMATION

### KEYWORDS

environmentally-friendly navigation,  
 fuel conservation, minimal emissions,  
 minimal fuel consumption, navigation  
 systems, navigation techniques, traffic  
 information

## IMAGES



Link-level fuel consumption modeling methodology

### CATEGORIZED AS

- ▶ Environment
- ▶ Other
- ▶ Transportation
  - ▶ Automotive
  - ▶ Other
  - ▶ Personal

### RELATED CASES

2009-174-2

## BRIEF DESCRIPTION

### Background:

Current navigation systems offer “shortest-distance” or “shortest-time” functions to help avoid traffic congestion but neither of them determine the most fuel efficient route. With rising gas prices and vehicle emissions, a more advanced navigation system with additional functions, such as an environmentally-friendly feature, is needed. This accomplishment can make a huge improvement on increasing fuel costs and air pollution. The in-vehicle navigation system is also expected to competitively penetrate the US market in the next couple years with annual sales quadrupling to \$13M.

### Brief Description:

UCR researchers have developed an innovative vehicle navigation system (VNS) that will allow users to choose a route that is the most gas efficient and emanates less emissions. The energy- and emissions-minimization function is incorporated on top of distance- and time-minimizing functions that currently exists in

the traditional VNS. This new intelligent transportation system utilizes a state-of-the-art modal emissions model (CMEM) that encompasses real-world vehicle activity patterns, and can calculate the fuel consumption and emission values of each vehicle trajectory.

#### **ADVANTAGES**

- ▶ Calculate fuel consumption and emissions for a travel route
- ▶ Conserve fuel & make travel more cost-efficient and eco-friendly

#### **APPLICATIONS**

- ▶ System can be employed as an on-board VNS, portable navigation system or installed into cellular phones
- ▶ Partnerships with original equipment manufacturer (OEM) companies

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