

7. PROMOTION OF ITS

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 Government-backed ITS projects

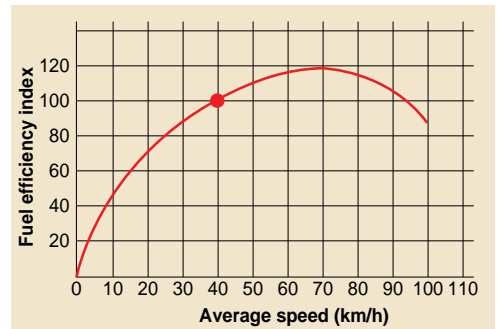
- (1) Advances in navigation systems
- (2) Electronic toll collection systems (ETC)
- (3) Assistance for safe driving
- (4) Optimization of traffic management
- (5) Increasing efficiency in road management
- (6) Support of public transport
- (7) Increasing efficiency in commercial vehicle operation
- (8) Support of pedestrians
- (9) Support for emergency vehicle operations

Various R&D is now being undertaken to introduce the intelligent transport systems (ITS) and solve traffic problems such as road congestion. Attracting most attention are traffic information systems utilizing advances in navigation systems, and electronic toll collection systems(ETC), assistance for safe driving, and increasing efficiency in road management on expressways. MMC is working to develop, commercialize and encourage wider use of such new technologies to alleviate traffic conditions and make driving safer and more comfortable.

■ The connection between traffic congestion and fuel efficiency

It is estimated that around 11% of automobile fuel consumption is due to traffic congestion, and it is known that increasing average speed in traffic congestion from 10km/h to 20km/h would result in an improvement of almost 60% in fuel efficiency.

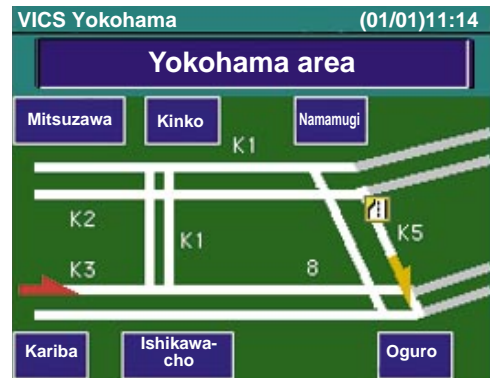
Easing traffic conditions and eliminating traffic congestion can therefore make a major contribution to reducing CO<sub>2</sub> emissions.



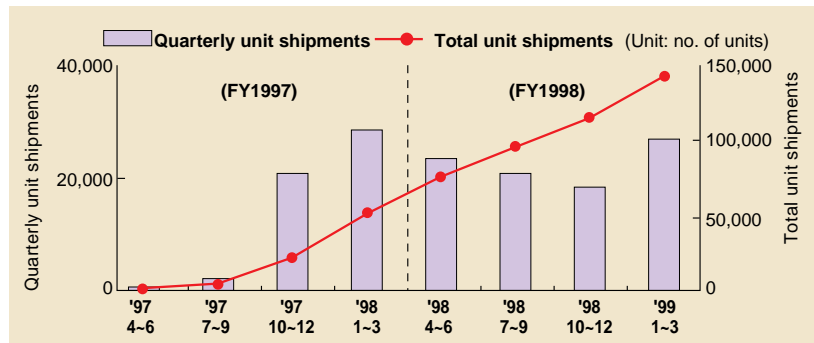
**Average speed and fuel efficiency**  
 Fuel efficiency at each average speed where fuel efficiency at average speed of 40km/h is 100 (2,000cc passenger car with automatic transmission)  
 Source: Compiled from Japan Automobile Research Institute data

■ Traffic information systems

1990 saw the release of MMC's MMCS car navigation unit, which became the basis for ITS advanced information transmission. Since then, we have upgraded the quality and scope of map data and accuracy of vehicle location, and in 1996 began fitting some models with VICS to provide traffic information. Further expanding the range of vehicles equipped with VICS, all new-generation MMCS systems (multiple display type) used in new models from the 1998 model year Chariot Grandis have been equipped with VICS, including minicars, and we are continuing our efforts to expand use of car navigation systems to help ease traffic congestion.



VICS information display

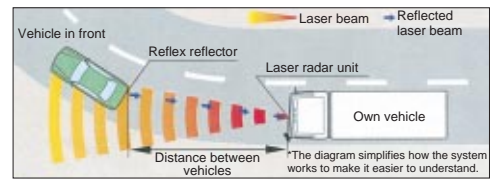


Unit shipments of MMC VICS car navigation systems

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■ Eliminating expressway congestion

Congestion of expressways is said to account for 7% of all traffic congestion loss. In order to eliminate traffic congestion at expressway tollbooths, work is underway to introduce the infrastructure for ETC at all tollbooths throughout Japan. In readiness for when full-scale ETC begins in March 2000, MMC is fitting its models with in-vehicle equipment and participating in the trial ETC project on Chiba Prefecture toll road scheduled to enter operation in January 2000.



Laser distance detection system

One effective means of easing congestion caused by reductions in speed in tunnels and sags (sections of road where the slope changes from down to up) on expressways is driver assistance in the form of distance warning and distance control systems. MMC was one of the first to develop and commercialize a distance warning system, and further improvements continue to be made.

Since the 1998 model year, vehicles have been equipped with a new and improved scanning laser radar system for detecting the distance to the vehicle in front. MMC also achieved a world first by creating the adaptive cruise control system for passenger cars capable of maintaining a set distance from the vehicle in front. This system was adopted for use in large-sized trucks in May 1998, and is now fitted in various models of the super grade. MMC is thus actively utilizing advanced ITS communications technology and infrastructure, and forging ahead with the development and commercialization of systems to help protect the environment.

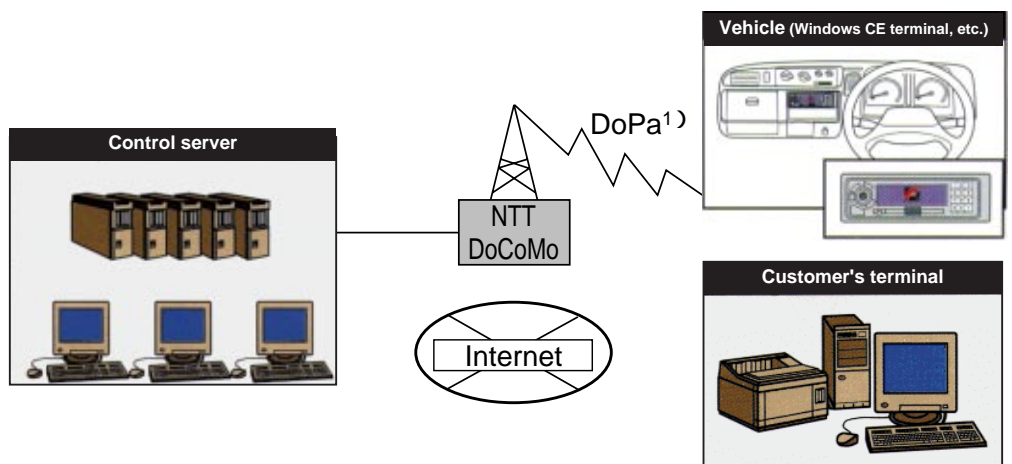
■ Logistical and operational support

The Mitsubishi-Fuso Total Support System being developed by MMC is a state-of-the-art logistical and operational support system to enable more efficient use of commercial vehicles. An on-board computer automatically collects data on factors such as the operating status of the vehicle, its location as determined by GPS, speed and fuel efficiency. This data is then transmitted via the internet and a packet communication mobile phone service, and displayed in real time on a terminal at the company's office. Not only does this contribute to vehicle and freight quality control, but by providing information on optimum routes and directions to raise fuel efficiency, it can also improve supervision of operations and reduce the impact on the environment.



1) DoPa

A type of packet communication service. Users are charged a fee based on the volume of data communicated regardless of distance or connection time. "DoPa" is a registered trademark of NTT DoCoMo Co., Ltd.



Mitsubishi-Fuso Total Support System