In recent years, there has been a growing expectation for a new mobility society that is safer, more comfortable, and more environment-friendly. Sumitomo Electric has been engaged in ITS development in order to connect people, vehicles, and society through information and communication technology. For the creation of the new mobility society, we will continue to provide total solutions from product design and manufacturing, software development, and system engineering to maintenance services.
For the creation of a mobility society that is safe, comfortable and environment-friendly

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Public Transportation Priority Systems (PTPS)

Priority for Public Transportation

Public transportation (buses) can pass through intersections with a high “green signal” rate.

Bus Location System

Easy Search of Bus Location

Users can find the accurate bus situation (location and/or waiting time) more easily.

Emergency vehicles such as police cars, ambulances or VIP cars can pass through intersections more fast and safe.

Critical information such as traffic signal, blind spot, etc. is provided to drivers for preventing traffic incident.

Traffic Signal Prediction Systems (TSPS)

More eco-friendly drive

Based on traffic signal data, drivers can avoid red signals or slow down to reduce CO₂ emissions.

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Driving Safety Support System

More Safe Drive

Administrator can easily understand traffic situation (congestion, traffic volume, speed and/or incident) through data and images.

Expressway Traffic Monitoring System

Grasp traffic situation

Fast Emergency Preemption Systems

Right of Way for Emergency Vehicles

http://global-sei.com/its/
Integrated Traffic Control Systems (ITCS)

Optimizing traffic conditions by analyzing and utilizing collected data

The ITCS system supports safe and smooth driving conditions by controlling traffic signals and providing drivers with real-time traffic information using analysis and simulation results based on information collected by sensors on the road. Aiming at the creation of optimal traffic conditions for the city and the environment, Sumitomo Electric provides a wide range of products, including vehicle detectors, traffic signal controllers, center management systems, and communication units connecting them. They are used in many places in Japan, including the Tokyo Metropolitan Police Department Traffic Control Center, one of the world’s largest traffic control systems.

Expressway Traffic Monitoring System

Contributing to the creation of safe and smooth mobility environment by measuring traffic volume on expressways and providing results.

The center system collects information from loop-coil and image detectors and provides traffic information and travelling time. It also detects unusual situations, such as stopped or slowing vehicles, by processing camera images. This information is provided via road information boards and ITS spot services to support safe and smooth driving conditions.

Traffic Signal Control Technologies

MODERATO-S

Controls traffic signals. It consists of a macroscopic control in the traffic control center and a microscopic control in each traffic signal controller. The former optimizes the entire road network traffic in the city, and the latter controls varying traffic conditions at each intersection.

Demand Prediction Control

Enables real-time signal control based on estimated traffic volume for next few minutes.

Drawing on its telematics technology accumulated over many years, Sumitomo Electric provides useful information for a safe, comfortable and ecological driving.

Telematics Software

(Traffic Information Related Software)

We develop and distribute the software and contents necessary for delivery systems such as telematics services.

Telematics Software

SBi’s Telematics Software is system building software for supporting economical and safe driving, location management, and information supplement such as traffic congestion prediction and optimal routes.

Probe Information Processing Technology

It generates information on life-travel time and vehicle behavior by processing collected probe information with our unique technology using digital road map (clearing, linking, matching, and probe analysis algorithm). It is possible to process data compressed probe information and the data out for specifying a driving path without requiring high accuracy and stable location information.

Traffic Signal Prediction Systems (TSPS)

Based on signal data from infrared beacons, SDS uses on-board devices to provide drivers with information on the optimal driving speed to avoid red signals, as well as when to slow down and idle to reduce CO₂ emissions.

Using ITS radio communications, we aim to develop even more advanced driving-supporting systems.

Collaboration of Vehicles and Infrastructure

Connecting people, vehicles, and infrastructure through data communication, ITS technology offers new services that could not have been obtained before and improves driving environments.

Advanced Mobile Information Systems (AMIS)

This system provides real-time traffic information gathered at the Traffic Control Center and delivers them via VICS, variable message signs, car radios, and other media.

Driving Safety Support Systems (DSSS)

DSSS relays traffic information through optical beacons to on-board devices and warns drivers about situations that they are unable to see. Based on the incoming data from beacons, on-board devices provide information to drivers depending on a driving situation.

e.g.) Signal recognition enhancement system, etc.
**Universal Traffic Management Systems (UTMS)**

Consists of subsystems, each of which aims to provide traffic information, assist safety driving, prepare for emergencies, enhance travel and logistics efficiency, and protect pedestrians.

**Public Transportation Priority Systems (PTPS)**

When detecting public buses via infrared beacons, PTPS gives them priority, by controlling traffic signal timing such as extending green light phases or shortening red light phases. The system supports on-time travel and eased traffic congestion during rush hour with its automatic priority control.

**Fast Emergency Preemption Systems (FAST)**

FAST prioritizes emergency vehicles detected by infrared beacons. It controls six signals with one beacon to change the signal timing depending on the type of vehicle, resulting in the reduction of waiting time at an intersection by 14% on average.

**ITS-Related Equipment**

**Traffic Signal Controller**

Applicable to the latest traffic signal control technologies, such as demand prediction, and Driving Safety Support Systems (DSSS), and also functional in the event of a disaster.

Traffic Signal Controller with Built-in Battery

Controls traffic signals even in the case of electric power loss.

**Wireless Station and Control Unit**

Ensure continued traffic signal control using microwave communication at 400 MHz frequency band dedicated to the police in case of disaster.

**Vehicle Detectors**

Include conventional ultrasonic detectors, power-saving compact far-infrared detectors, and versatile image detectors.

**Advanced IR-beacon**

Communicates to in-vehicle unit for car probe data and traffic signal information using near infrared rays. Regarded as a key device for next generation ITS.

**Traffic Signal Prediction Systems (TSPS)**

This equipment is used for signal control, information transmission, and other traffic-related services.

**Vehicle-Infrastructure Cooperation**

Where DSSS and traffic signal data is combined, the system can be used for vehicle infotainment or traffic safety support. As the situation of the vehicle on the road changes, the system operates with the vehicle's information to provide support to the driver.

**Image Processing Technologies**

Vehicle Detection using Image Processing

Enables high-accuracy vehicle detection and stable tracking performance under various environmental changes and fluctuating weather conditions by the improved algorithm that combines spatial subtraction processing and conventional brightness processing. Used in combination with full HD cameras or wide dynamic range cameras, this technology can be applied for DSSS long distance measurement.

**License Plate Reader**

Recognizes various types of license plates, including tilted plates and dirty plates, for traveling time measurement. Using the original character fonts recognition algorithm, this unit can be used in many different countries.

**Tabletecs Terminal**

**Connected to the telematics center, this system provides a safer and more comfortable driving experience.**

**Smartphone Applications that can be used with Infrastructure Information**

Provide TSPS (Traffic Signal Prediction Systems) functions and DSSS (Driving Safety Support Systems) to drivers, with information provided by infrastructure.

The application receives information about vehicles, motorcycles and pedestrians that the vehicle operator cannot see. In addition, it receives information about the signal change. This information will help drivers pass through without any anxiety, stop and start safely, along with other benefits. This will contribute to the realization of safe and comfortable eco-friendly driving.

**Car Navigation Software for Smartphones and Tablet Computers**

(AgentNavi™)

Supports developments of car navigation systems by the functions of mapping, route search, route guidance, and map-matching algorithm based on VICS traffic information.

*The above pictures are superimposed images.*
Traffic Control Center
Core of Traffic Management
on unified traffic information.
manages urban traffic based
Traffic control center totally
Traffic Signal Controller
Congestion at intersections will be
Signal.
Reduction of Congestion
1968  Pilot experiment in Koshu Kaido
1960s
1970  Traffic control systems
1972  Bus location systems
1977  Expressway traffic monitoring systems
1970s
1988  Car navigation systems
1980s
1996  VICS service
1990s
2002  Telematics systems
2000s
2011  Vehicle-infrastructure cooperative systems
2013  Telematics unit for cooperative system
2010s
Easy Search of Specified Vehicle
on the license plate number.
location of specified vehicle based
Administrator can find the accurate
License Plate Reader
2011  Vehicle-infrastructure cooperative systems
2013  Telematics unit for cooperative system
2010s

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Traffic Vision is a trademark of Sumitomo Electric System Solution Co. Ltd. in Japan.
AgentNavi is a trademark of Sumitomo Electric Industries, Ltd. in Japan.
Vehicle Information and Communication System (VICS) traffic information used in the Traffic Vision is based on the road traffic information provided by VICS Center. VICS center’s technology is used to create road traffic information data. Vehicle Information and Communication System (VICS) traffic information used in the Traffic Vision series is based on the data provided by the Foundation Japan Road Traffic Information Center, where the technology of the Vehicle Information and Communication System Center is used.
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