# 01

# Contribution to Society by Realizing Ubiquitous Services

## Creating a New Value in Transportation for the Greater Safety of Pedestrians and Automobiles

### Ubiquitous Services Accessible Whenever and Wherever

We have now entered a new era where we can communicate with anybody or anything whenever and wherever necessary, thanks to the popularization of mobile devices such as mobile phones, laptop PCs as well as the establishment of broadband infrastructure and NGN (Next Generation Network).

The development of such ubiquitous networks has changed the perception of services of people around the world, their life styles and social structures. Let us take a simple action of withdrawing money as an example. Several decades ago, we had to go to bank counters with our bank books and seals during business hours to draw money from our own accounts. Then we started using cash cards and ATMs. Today we can deposit, withdraw and use electric money with our mobile phones. Further development of identity verification technology might allow us to draw money or shop at stores without carrying any devices in the future. When this future is realized, we will be freed from time, place and physical constraints. Ultimate ubiquitous services entail an environment in which we are surrounded by all kinds of services wherever we go with complete

access whenever necessary.

OKI has been involved in the development of various solutions in order to help realize ubiquitous services.

### Information and Communication Technology Utilized for Automobile Transport

Automobile transport is one of the fields where ICT (Information and Communication Technology ) is being utilized to realize ubiquitous services. Automobile transport forms an important part of social infrastructure. However it also causes some problems such as traffic accidents, traffic jams and air pollution. The Intelligent Transport Systems (ITS) program is an initiative intended to build a new transport system for users, roads and automobiles by use of ICT, and thus improve safety, transport efficiency and environmental conservation.

OKI has always been a pioneer in developing various technologies for the ITS initiative. For example, our proposal of developing RACS (Road Automobile Communication System) was accepted by the Ministry of Construction (the present Ministry of Land, infrastructure, Transport and Tourism) in 1984.

### Helping Realize a Safety Driving Assistance System through OKI's Inter-vehicle Communication System

In addition to VICS (Vehicle Information and Communication System) and ETC (Electronic Toll Collection) which have already been put to practical use, OKI has been working to develop various ITS solutions for the next generation based on these technologies. Among them is an inter-vehicle communication system that allows the direct communication of text data, sound and images between different automobiles. Since this system enables drivers to get traffic information such as that on accidents and traffic jams instantaneously, they are able to avoid rear-end accidents and other impact accidents.

The ITS Promotion Council is currently conducting a large-scale demonstration experiment of a safety driving assistance system aiming at the practical use thereof in 2010. OKI has provided all automobile manufacturers participating in this experiment with its inter-vehicle communication system. OKI also provide its road-automobile communication system to a demonstration

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ITS Business Unit

**Commitment**

We started working for transport-related systems with present ITS solutions in mind even before the development of the concept of ubiquitous services. We believe that ubiquitous services are necessary for automobile transport because it is an indispensable part of our social life. We also believes that ITS solutions could open up a lot of possibilities. OKI, as the first company to address technological development leading to the present VICS, has always been a leading player in this field. Taking in pride in being a pioneer, we will continue to create new services and values.

open to the public in February 2009. The system, featuring the 5.8GHz bidirectional radio communication technology developed for ETC, was used for a test-drive event on a public road during the demonstration.

## ITS with Ubiquitous Services Envisioned by OKI

OKI believes that a wide spectrum of solutions offered through ITS are not limited to those for traffic safety, improved transport efficiency and environmental conservation. For example, OKI has been working to develop a system for tourist drivers in Okinawa as part of a project promoting Ubiquitous Special Zones facilitated by the Ministry of Internal Affairs and Communication. The system is designed to allow drivers to access information on tourist attractions available only through local people and offer concierge services for foreign tourists.

If automobiles could send and receive a wider variety of information in the future, such information could be used for various purposes such as the production of a disaster prevention map, the evaluation of a road maintenance or improvement project, and the collection of basic data necessary for regional development plans. In other words, automobiles could be not only a basic means of transport but also an important part of information infrastructure.

On the other hand, we need to secure a new level of information security for a new information system. OKI has also been active in solving information security problems. We have developed various security-related technologies by our own, and have tried to find solutions to security issues through industry-academic-government projects. We will continue to make efforts to create a safer and more convenient society with ubiquitous services.
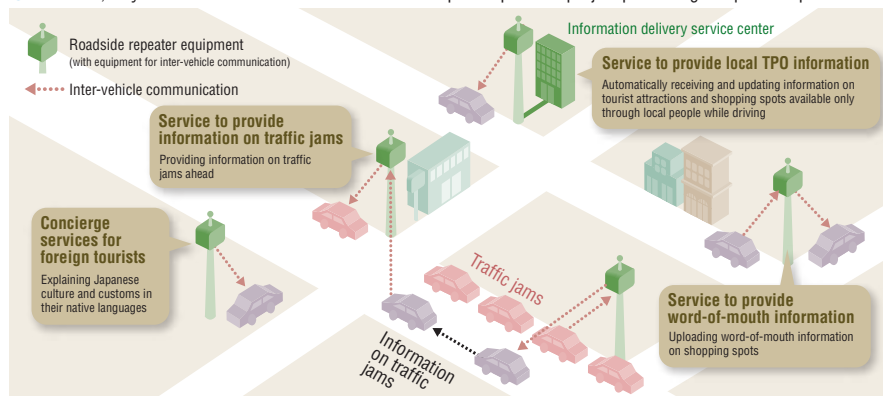
### Stakeholder's Voice
*Masakatsu Ura*

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General Manager
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We have been involved in the utilization of IT in rail and bus transport as a member of the Nishitetsu Group. We have built a number of systems thus far by utilizing OKI's system building technologies and operational know-how in the ITS field. Among them are "Q-Bus Search", a highway bus location system, and a "transfer information system for highway buses" used at Kiyama Service Area on the Kyushu Expressway. These services have been highly acclaimed by our customers.

ITS solutions for the transport business are still in an early stage of implementation. We are interested in creating new businesses through them such as an information carrier service based on the inter-vehicle communication system, and an information service utilizing transport infrastructure such as rail and bus systems. We will continue to strengthen the partnership with OKI, try to meet the above targets one by one, and thus help realize comfortable ubiquitous services.

● ISLAND*, a system for tourist drivers in Okinawa developed as part of a project promoting Ubiquitous Special Zones



Roadside repeater equipment
(with equipment for inter-vehicle communication)

Inter-vehicle communication

Information delivery service center

**Service to provide local TPO information**
Automatically receiving and updating information on tourist attractions and shopping spots available only through local people while driving

**Service to provide information on traffic jams**
Providing information on traffic jams ahead

**Concierge services for foreign tourists**
Explaining Japanese culture and customs in their native languages

Traffic jams

Information on traffic jams

**Service to provide word-of-mouth information**
Uploading word-of-mouth information on shopping spots

*ISLAND:Integrated Spot Local Assistance & News Delivery System for tourist drivers

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## Column

## World's First Inter-vehicle Communication Attachment for Mobile Phones to Help Increase Pedestrian Safety

Since about 40% of traffic accident fatalities in Japan are pedestrians and bicycle riders, information exchange between pedestrians and automobiles have attracted considerable attention as effective measure to increase pedestrian safety. OKI has been working to develop "SPAN system", a system to enable communication between pedestrians and automobiles, based on technologies we have developed for the inter-vehicle communication system.

Following the development of the "Safety Mobile Terminal" utilizing mobile phone technology in May 2007, OKI succeeded to prototype the world's first "Safety Mobile Phone Attachment" in January 2009. Pedestrians can directly exchange location information with automobiles with inter-vehicle communication system by connecting this attachment to their mobile phones. We aim at contributing to the "Intercommunication System for Pedestrians, Roads and Vehicles" to be launched in fiscal 2010 with this technology and helping decrease traffic accidents.

Furthermore, we will develop various applications effective for increasing safety such as a system to alert pedestrians to potential dangers via their mobile phones as well as a system for pedestrians and automobiles that allows them to effectively communicate their intentions.



Safety Mobile Phone Attachment