

Intelligent Transport Systems

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PREFACE



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IN the early 70's, Hitachi joined and promoted the national project called Comprehensive Automobile Control System (CACS). As a member of this project, Hitachi made IC chips, among other ITS devices and equipment, for simulating and evaluating complex traffic flow on road networks.

In 1989, Hitachi joined the Vehicle Information Communication System (VICS) project to disseminate real-time traffic information to vehicles. The nationwide number of VICS terminals is more than 2 million units out of a total of 6 million navigation units. Hitachi makes human-friendly bird's-eye-view navigation systems.

In 1997, the Advanced Mobile Information System (AMIS), an advanced version of VICS, was demonstrated as a showcase technology at the Nagano Winter Olympics. Hitachi actively promoted this project and developed the methodology for estimating linked travel times from a relatively small number of traffic sensors.

Today, Hitachi is busy preparing the Electronic Toll Collection (ETC) system, covering some of 1,700 lanes nationwide, to be launched in the spring of 2001. ETC is expected to be a unified service of ITS and e-commerce; that is, it unites various applications inspired through the ideas of citizens and venture companies. Hitachi participates as an international ETC standardization promoter.

All systems mentioned above have been developed in government-funded project.

Recognizing the fact that transport accounts for 20% of energy consumption, and 10% of Japan's economy, Hitachi has proposed the three following ITS strategies and products.

(1) ITS Total Solution Provider: Hitachi's extensive capabilities of technology and thorough system integration deliver a product range that encompasses electronic parts, on-board systems, roadside systems, communication systems, computer systems, and service provision.

(2) Globalized ITS Platform: Highly reliable and highly

functional multimedia on-board information and control platforms conceived for their suitability to standardized worldwide automotive applications.

(3) Seamless communications and services: based on the Autonomous Decentralized Service System (ADSS), for flexible and dependable information delivery; they support the full gamut of transportation-related activities.

ITS still faces many challenges such as:

(1) ITS is actually the harmoniously integrated system of each specifically developed system such as VICS, ETC, AHS, UTMS, and even multi-modal transportation each of which is itself a tangible system.

(2) ITS is eventually intended to become a dynamically enduring system because traffic congestion appears depending on dynamic weather, artificial events, and personal and daily preferences and life-styles.

(3) ITS is expected to be a truly seamless and broad-area service for both public and private services because transport itself is the efficient link between various businesses and life-styles.

To meet these challenges, Hitachi can provide the above products and services as well as the best partnership with a variety of major international companies.

In this issue, the first four papers present, in-vehicle information systems, in-vehicle sensors, digital mobile telecommunication devices, and semiconductors, which are all key components to build ITS service systems and are currently available internationally. The next two short articles, the Autonomous Decentralized Service System (ADSS) and Highly Elliptical Orbit (HEO) Satellites, cover ITS architecture for seamless services. The following three papers describe current topics such as the electronic-toll-collection system being installed nationwide, the travel time-estimation-system already in operation, and the digital broadcasting system for ITS. Hitachi hopes these topics contribute to the construction of better ITS systems in various countries.