SS/TDMA Satellite Communication Systems

In SS/TDMA using multibeam satellites, the interconnection of spot beams is dynamically switched in synchronization with burst transmission to multiple destinations by TDMA, and satellites are operated efficiently. In order to realize this system, a solution for finding the most efficient switch switching pattern for beam-to-beam communication demands was developed, and a microwave switch for onboard satellites and a technology for synchronizing a TDMA reference station with satellite switches were developed, and the technology was demonstrated. In the development of a commercial system using the Intel Sat III satellite, burst time plan creation software was developed and has made a significant contribution to the practical application of SS / TDMA.

SS: Satellite Switching

Broadband Wireless LAN Technology

Since the mid-1990s, research and development on broadband wireless LAN technology has been pursued with the aim of realizing full-scale multimedia wireless communication. Aimed at wireless access by ATM, wireless transmission technologies such as high-speed ATM cell transmission architecture and high-speed and high-efficiency ARQ technology have been developed, and system experiments have demonstrated the feasibility of multimedia mobile access. In addition, packet mode OFDM transmission technology was established to realize broadband wireless communication in multipath fading, and its technical feasibility and effectiveness were demonstrated. OFDM technology was adopted as the IEEE802.11a standard, and has greatly contributed to the direction of subsequent broadband wireless transmission research for mobile phones and wireless LANs.

ATM: Asynchronous Transfer Mode

Mobile FM Multiplex Broadcasting

DARC (Data Radio Channel) is an FM multiplex broadcasting system that multiplexes and transmits digital data such as characters and graphics simultaneously with FM broadcasting. In October 1994, FM Tokyo launched a service called "Visible Radio," and in April 1996, the Vehicle Information and Communication System Center (VICS Center) adopted the service to distribute road traffic information for car navigation systems. It has been put to practical use at many FM broadcasting stations nationwide, and is used for the broadcasting of news, weather, and program-related information for mobile terminals and road traffic information services.

 VICS: Vehicle Information and Communication System