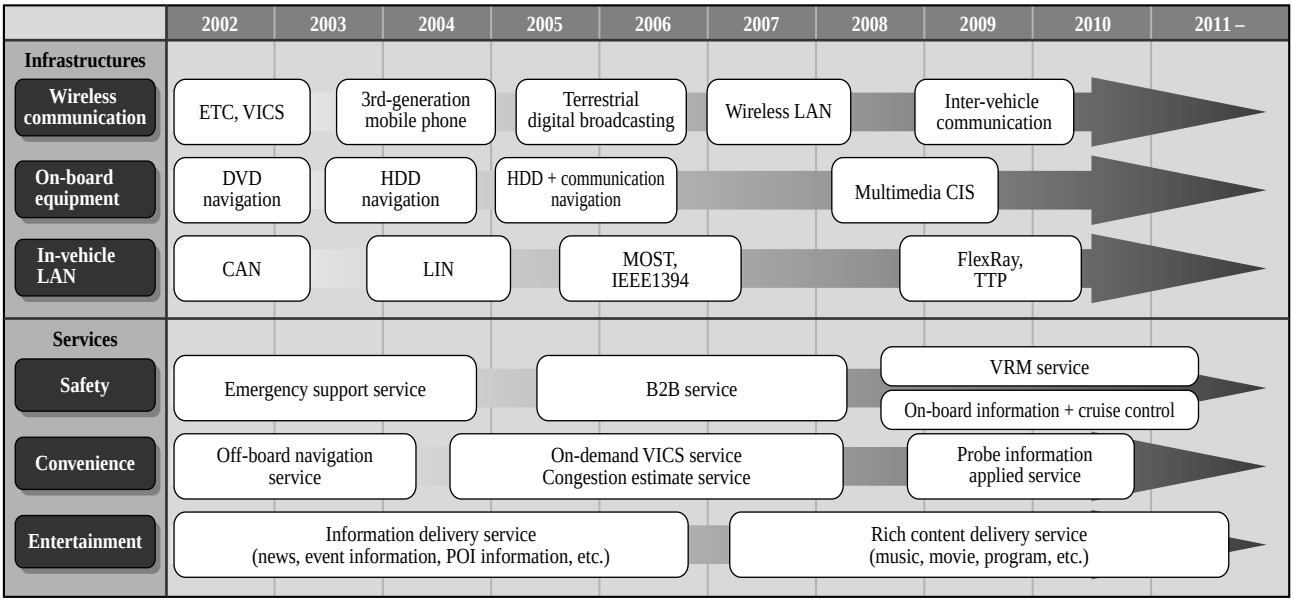
Trends in Vehicle Information Systems and Hitachi Group's Initiatives



ETC: electronic toll collection
VICS: vehicle information and communication system
CIS: car information system
DVD: digital versatile disc
HDD: hard disc drive
CAN: controller area network
LIN: local interconnect network
MOST: media oriented system transport
TTP: time-triggered protocol
B2B: business to business
VRM: vehicle relationship management
POI: point of interest

VARIOUS leading vehicle manufacturers began new information services for drivers of vehicles in 2002 and next-generation telematics started with this as a turning point. The sales of car navigation systems with communication functions connecting with the center have been increasing rapidly and vehicles now routinely connect with the network. The present network connections through cellular networks will be switched to wireless LANs (local area networks) or digital broadcasting in the future, enabling users to cut communication costs and large-data-delivery services to be readily provided. In addition, car navigation with on-board HDDs (hard disc drives) has started to become popular because music server functions have gained public favor. This means the capacity for large data storage has been introduced into vehicles and the new HDDs can accumulate not only musical content but also vehicle information. Moreover, in-vehicle LANs that control and diagnose electronics through networks have become popular in electric vehicles with electric powertrains. It will be possible to easily gather both control and the diagnostic information from vehicles through in-vehicle LANs. Different, new information services for vehicles will be developed one after another by introducing the above three on-board information infrastructures, that is, "network connection of vehicles," "introduction of on-board HDDs," and "popularization of in-vehicle LANs." Hitachi Group proposes system solutions for information services, that is, safety, convenience, and entertainment. In terms of safety, we propose VRM (vehicle relationship management) in the on-board information-system field. The large amount of accumulated information on the condition of vehicles can be analyzed in detail by using infrastructures such as on-board HDDs and in-vehicle LANs. Also, motorists can drive in safety with peace of mind because they know the condition of their vehicles in advance. In terms of convenience, we propose a navigation system that supplies traffic information, enabling drivers to arrive at their destinations more quickly and more comfortably. We intend to provide a navigation system that enables to avoid traffic jams, through both real-time information from the network

and past congestion information accumulated in the on-board HDD. In terms of entertainment, we propose rich content delivery such as music and karaoke. It is possible to achieve rich content delivery reducing communication costs and download time by combining new copyright protection and payment methods with super-distributed technology and a wireless communication infrastructure such as wireless LANs or digital broadcasting. Hitachi Group has been proposing various system solutions that are relevant to safety, convenience, and entertainment in vehicles by making free use of the on-board-equipment, information-communication, and vehicle-parts-diagnosis technologies that it has fostered.