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## Convergence of Information Technology and Control Systems



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# Electric Power Systems

Hitachi possesses many of the technologies from the fields of information, communication, and control that are required for smart grids such as grid stabilization technologies able to cope with increasing use of new energy sources and communication technologies for automated meter reading. The group intends to utilize its unique strengths in the fields of both electric power and electrical machinery on the one hand and information and communications on the other to develop and supply systems for smart grids.



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1. Full-scope simulator for operational training at Shimane Nuclear Power Station Unit 3 of The Chugoku Electric Power Co., Inc.
2. Automatic Power Distribution System
3. Shimane Nuclear Power Station Unit 3 of The Chugoku Electric Power Co., Inc.
4. Central control room at Yanai Power Station of The Chugoku Electric Power Co., Inc.
5. Digital protection and control equipment



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# Transportation Systems

Hitachi supports the railway industry in a wide range of fields including rolling stock, signals, operational management, electric power conversion systems, passenger reservation systems, and information services. Hitachi is also working on new transportation systems for the future in its role as Japan's only full systems integrator for the railway industry.

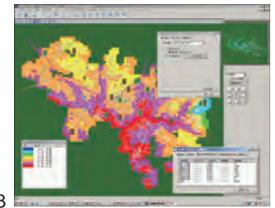


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6. Main Command Center for the ATOS, Autonomous Decentralized Transportation Operation Management System for Tokyo Region
7. Digital signage system (provides guidance in event of a traffic disturbance)

# Water Resource Systems

Hitachi has been contributing to the management of water resources through both hardware and software, including water treatment equipment, electric power substations, electrical machinery, information systems, monitoring and control systems, and services. The group contributes to the creation of safe, secure, and convenient water supply and sewage networks for cities or entire regions by using ICT to combine these elements into systems.



1. Misato Purification Plant of Tokyo Metropolitan Government Bureau of Waterworks
2. Monitoring and control room for water resource management solution
3. Display screen for water distribution control system of Kashiwa City Water Department

# Steel Industry Systems

Hitachi helps steel plants achieve stable operation and high levels of product quality and has supplied electrical and control systems to many steel industry sites globally incorporating high-performance motors and inverters with excellent energy efficiency together with controllers and process computers that feature advanced computing technology.



4. Hot rolling mill (finishing mill) at Dongbu Steel Co., Ltd. in South Korea
5. Control room for tandem cold rolling mill control system at Union Steel Co., Ltd. in South Korea
6. Drive system using high-voltage, high-capacity IGBTs (insulated-gate bipolar transistors)

# Industrial Systems

Hitachi supports the optimization of plant operation by supplying total solutions to the manufacturing industry, including production management packages for various different industries and monitoring and control systems for large plants. Hitachi also uses its plant monitoring and control technologies as a basis for its activities in the field of monitoring and control systems for social infrastructure such as airport facility networks and highway networks.



1. Production management system for automotive industry
2. Control system for airport facilities
3. Monitoring and control system for gas and chemical plant
4. Traffic information system



# Platform Products

Hitachi provides support for solutions in a range of industries through platform products based on highly reliable realtime control technology.



5. S10V high-speed PLC with realtime multitasking operating system
6. R700 main controller with dual-RISC processor
7. HF-W7500 industrial computer (high-end server model)
8. CF-1000/FT fault-tolerant server with software-synchronized, loosely-coupled, four-way redundancy