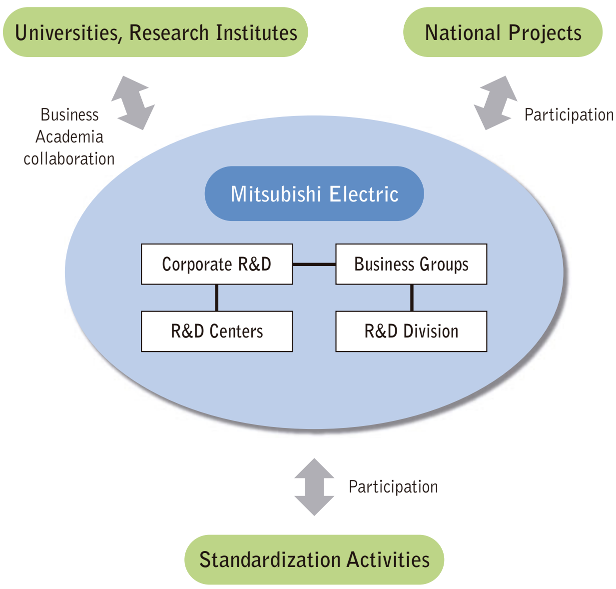
R&D Initiatives

The Mitsubishi Electric Group's R&D organizational structure consists of R&D centers that are associated with the Corporate Research and Development Group, including the Advanced Technology R&D Center, Information Technology R&D Center, Industrial Design Center, and laboratories in the United States and Europe. These are closely linked with research and development departments affiliated with each business group and work in conjunction to develop new products and innovative new technologies to form the foundation of future businesses.

The Group is engaged in R&D activities in line with its VI Strategy of making strong businesses stronger and bolstering competitiveness, including in core businesses such as elevators and escalators, factory automation equipment, and automotive electric and electronic components. Our R&D activities are designed to further differentiate Mitsubishi Electric from competitors and enable us to win in global competition. The Group is also proceeding with development efforts to create new solutions. Under our AD Strategy, designed to reinforce solutions businesses centered on strong businesses, we are working to fuse various technologies to provide environment and energy-saving solutions, total security solutions, and solutions for a broad range of other areas.

To support future business competitiveness, we are pressing ahead with efforts to obtain intellectual property rights linked with business and development strategies, as well as intellectual property rights that can be licensed and standardized for use on a global scale. In addition, Mitsubishi Electric is promoting active collaboration between industry, academia and government by conducting joint research with leading institutes in Japan and abroad, and by participating in national projects in Japan.

We promote the sharing of information so that results of these R&D initiatives can be used as assets throughout the entire Group, contributing to improved development efficiency.



R&D Results in Fiscal 2007

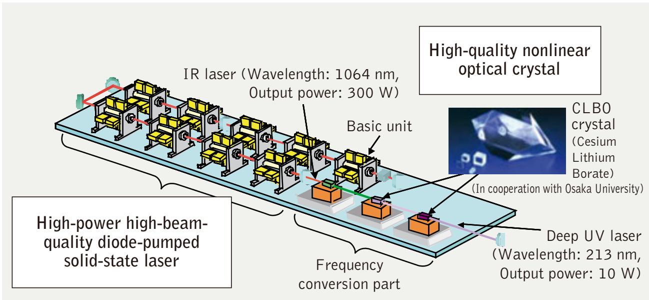
40Gbps Optical Communication System

Mitsubishi Electric has developed a high-speed optical communication system and key devices for large-volume communications networks between cities. At 40 Gbps, the system is four times faster than systems currently in use. We also have developed a DQPSK*1 optical transponder that, by expanding the time lag between signals, is capable of reducing deterioration of signal wave patterns that occurs over long transmission distances.

*1. DQPSK: Differential Quadrature Phase-Shift Keying, a modulation system able to change and convey four different optical phases

High-Power Solid-State Deep UV Laser*2

Mitsubishi Electric has developed a solid-state laser capable of the world's largest output (10W) of deep ultraviolet laser light with a wavelength of 213-nm*3. Use of this laser light enables microprocessing of transparent quartz materials and electronic circuit boards.



This is an explanation of R&D results, and plans for commercialization of these results have not yet been determined.

*2. This research was commissioned in part by the New Energy and Industrial Technology Development Organization (NEDO).
*3. Nanometer (nm): one-billionth of a meter

SiC Power Device

By testing prototypes of inverters that use silicon carbide (SiC) power devices, which reduce power loss and can be operated at high temperatures, Mitsubishi Electric became the first company in the world to succeed in operating a 3.7kW motor using such a device. Compared with conventional devices that use silicon inverters, our inverters cut power loss by over 50%. Developing such devices, we aim to contribute to enhanced performance, energy efficiency and size reduction of machinery and equipment.