

A key technology of national importance

The term “key technology of national importance” denotes scientific technology heavily invested in large-scale national projects and aimed at improvements in comprehensive national security and the realization of world-class research capabilities.

Japan’s Council for Science and Technology Policy considers the Next-Generation Supercomputer a “key technology of national importance” serving as a foundation of national scientific technology and industrial competitive strength, and has clearly designated the project as a long-term strategic national goal.

Key technologies of national importance

Space transport system

Secure/maintain the capability to launch satellites into space whenever necessary



The H-IIA Rocket

Ocean and earth exploration system

Develop observation and monitoring technology using satellite and ocean exploration technology, and offer integrated observational data to users



Deep sea drilling vessel "Chikyu"

Fast breeder reactor (FBR) cycle technology

Secure stable long-term energy supply by re-using uranium and plutonium-based nuclear fuel



Fast Breeder Reactor "Monju"

Next-Generation Supercomputer

Partial operation of the advanced, high-performance, general-purpose Next-Generation Supercomputer (with a computational performance of 10 petaflops) will begin in FY 2010, with a targeted completion date of 2012. Progress is being made toward development of application software for the supercomputer.



Image of Next-Generation Supercomputer facility

X-ray free electron laser (XFEL)



X-ray free electron laser facility (Photo taken on January 29, 2009)

XFEL is the world's highest-performance research facility for the instantaneous observation and analysis of atomic-level hyperfine structure and dynamics and change in ultrafast chemical reactions. XFEL will release its first research results ahead of facilities in Europe and America.

A continuous process of development

Supercomputers in Japan have been developed under the leadership of the national government. Numerous pieces of technology developed under these national projects have been deployed to other major computer systems across the country. Japan’s continuing research on supercomputer development will strengthen its R&D infrastructure and improve its overall level of technology.

