



Section 5 Promotion of Research and Development

1. Research and development strategy to enhance international competitiveness of Japan

The Ministry of Internal Affairs and Communications (MIC) has been promoting R&D in accordance with the 3rd Science and Technology Basic Plan (cabinet decision in March 2006) and the Sector-wise Promotion Strategy (Council for Science and Technology Policy, March 2006) formulated for the strategic prioritization of the plan.

In view of enhancing the international competitiveness of Japan, the Information and Communications Council released the ICT R&D and Standardization Strategy to Enhance Japan's International Competitiveness in June 2008. The MIC identifies the UNS R&D Strategic Program II (UNS: Universal Communications, New Generation Networks, Security and Safety for the Ubiquitous Network Society) as Japan's R&D strategy, and has been promoting active R&D activities based on the strategy. The UNS R&D Strategic Program II consists of three areas: (1) new-generation networks, (2) safe and secure ICT, and (3) universal communications. Global environmental conservation (anti-global-warming technologies) that covers all of the three areas has been added as a new R&D area.

(1) New-generation networks

Future networks are the foundation of the ICT industry and are expected to meet emerging needs flexibly and accurately. In order to support such future networks, the MIC has been intensively promoting research and development of the new-generation network technology. Specifically, the following are some examples of what has been undertaken: (1) R&D concerning new-generation network infrastructure technology, (2) R&D concerning next-generation photonic network technology, (3) R&D concerning quantum information communications network technology, (4) R&D on ubiquitous platform technology, and (5) R&D concerning terahertz wave technology.

(2) Safe and secure ICT

In the area of ICT safety and security, the MIC promotes research and development activities to overcome various problems with ICT, including disaster prevention and the natural environment, to realize a safe and secure society and to provide a dependable

ICT infrastructure so that anyone can use ICT effectively. Specifically, R&D activities are being carried out in several areas, including: (1) space communication technology, (2) remote sensing technology, (3) information security technology, (4) promotion of network security infrastructure technology, (5) anti-information-leak technology, (6) detection/recovery/prevention of route hijacking, (7) integration between robots and ubiquitous networks and (8) home network technology to curb energy consumption.

(3) Universal communications

With regard to the field of universal communications, the MIC promotes research and development activities to realize communications technologies that promote intellectual creativity and communications technologies friendly to people, including the elderly and the disabled who can then overcome age, physical, language and cultural barriers through the use of the most advanced ubiquitous networks in the world. Specifically, the research and development activities being carried out include (1) universal auditory/linguistic communications technology, (2) technology for Super High Definition video and (3) super reality communication technology through innovative three-dimensional video technology.

(4) Global environment conservation (anti-global-warming technology)

R&D in ICT, which has traditionally been conducted with the aim of improving services and business operations and reducing costs, has a positive effect on the reduction of CO₂ emissions. Now that global warming issues are getting more serious, it is necessary to promote R&D that will contribute proactively to the reduction of CO₂ emissions.

In response to the report of the Study Group on ICT Policies for Anti-Global-Warming Measures released in April 2008, the MIC resolved to promote R&D activities for such technologies as the management of consumption and supply of power through the informatization of energy flow, technology to realize a paperless society, fully-optical networks, energy-saving ICT devices and measurement of CO₂ emissions.

2. Development of a research and development environment

The MIC not only singlehandedly carries out Japan' own measures from the stage of R&D, but also promotes effective and efficient research and development activities of Japan in a concerted manner

by developing the research and development environment. Specifically, the MIC established the Strategic Information and Communications R&D Promotion Programme (SCOPE) in FY2002. Furthermore, the National Institute of Information and Communications Technology (NICT) constructed JGN2 plus which is the most advanced test bed network for R&D, in April 2008.