

Open Innovation Innovation Promotion Department

Executive Director Takaharu Koide

The Innovation Promotion Department cooperates with related departments in the Open Innovation Promotion Headquarters under the following mission with the aim of maximizing research and development (R&D) achievements.

- Promote efficient and effective R&D by making effective use of external research resources through collaborative research, commissioned research, and funded research with the aim of contributing to enhancing collaboration among government, industry, and academia.
- Promote open innovation by implementing R&D achievements in society through appropriate securing and effective use of intellectual property and effective standardization activities in collaboration with government, industry, and academia.

Promotion of collaborative research with companies, universities, public research institutions, etc.

In addition to ordinary collaborative research, NICT promotes "funded collabora-

tive research" in which NICT accepts the provision of research expenses from the collaborator. NICT also contributes to enhancing collaboration among government, industry, and academia through research based on external research funding such as competitive funds.

Promotion of researcher exchanges with outside institutions

NICT promotes researcher exchanges for mutual cooperation with universities and other institutions in diverse areas in the information and communication field.

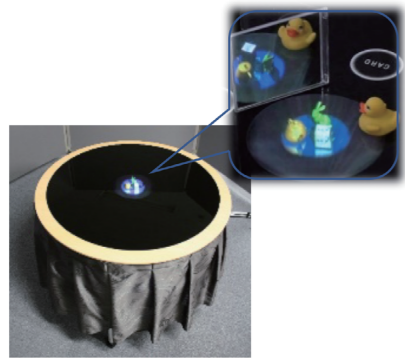
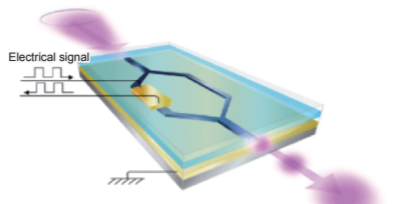

Tabletop Glasses-free 3D Display	Organic EO Polymer Material	Multilingual Translation
<p>Type: Researcher/corporate collaboration Technology transfer: To electronics manufacturers Summary: Development of a glasses-free 3D display for displaying three-dimensional images on a curved screen. Enables more realistic 3D display by increasing light beam density by 3.5 times and enhancing the floating sensation. This glasses-free 3D display enables 360-degree viewing of 3D images by multiple users from each viewpoint.</p> 	<p>Type: Researcher/corporate collaboration Technology transfer: To chemical manufacturers Summary: Organic EO polymer material is a promising material for achieving new optical devices featuring both high-speed and low-power-consumption properties. To promote the development of optical devices using this material and create a supply of polymers for organic EO compounds whose technology has already been transferred, the technology for this organic EO polymer material was transferred to two chemical manufacturers.</p> 	<p>Type: Researcher/corporate collaboration Technology transfer: To translation technology development companies Summary: NICT's high-accuracy speech recognition, translation, and speech synthesis technologies can be used in diverse areas including tourism, commercial complexes, and healthcare as an app on smartphones and other devices. The number of supported languages is being expanded to 31. Applicable to companies needing a translation system, patent/document translation companies, etc.</p> 

Fig.1 : Examples of technology transfers in FY2017

NICT also promotes research exchanges with academia, e.g., by concluding agreements with graduate schools based on the Joint Graduate School Program, and provides research opportunities with guidance by NICT researchers for graduate students.

Promotion of efficient and fruitful commissioned R&D by effective use of external research resources

In addition to continuous strengthening of collaboration with its own research, NICT has been promoting commissioned R&D by making use of the research capabilities of industry and academia.

In fiscal year 2017, NICT worked on 20 themes continuing from previous years resulting in 467 papers, 599 oral presentations, 17 proposals to standardization organizations, and 111 industrial property right applications. As for standardization activities, nine recommendations in total have been adopted, one by IEC (International Electrotechnical Commission), seven by oneM2M (Standards for M2M and the Internet of Things), and one by OSGi (Open Services Gateway initiative) Alliance.

Effective promotion of technology transfer

NICT promotes appropriate securing and use of intellectual property by providing end-to-end intellectual property services from the time of an invention to technology transfer thereby helping to expand its own revenues and foster open innovation. Specific examples include the licensing of a tabletop glasses-free 3D display and organic EO polymer material (Fig.1), which contributed to the implementation of NICT research results in society.

Promotion of standardization activities

Under close coordination with government, industry, and domestic and international standardization organizations and bodies, NICT promotes effective standardization activities based on its specialized knowledge and R&D results and contrib-



Fig.2 : Examples of international standards established in FY2017
IEEE Std 802.15.3d-2017: 100 Gb/s Wireless Switched Point-to-Point Physical Layer (left)
ITU-T X.1541 IODEF version 2: Incident object description exchange format (right)

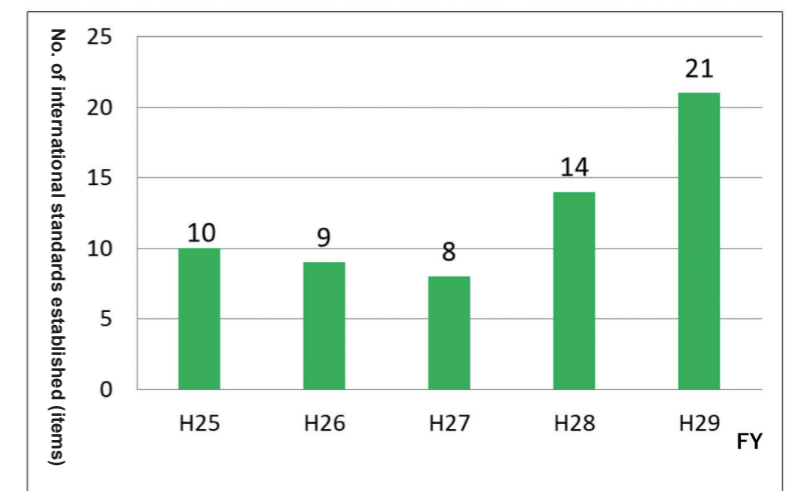


Fig.3 : Change in number of international standards established

utes to open innovation.

(1) To reflect its R&D results in international standards, NICT actively participates in meetings and other gatherings at various international standardization organizations. In FY2017, NICT submitted a total of 208 contributions based on R&D results. In the same year, a total of 39 individuals served as chairpersons, editors, etc. in various committees involved with standardization and meetings of international standardization organizations.

(2) NICT continued to maintain its membership qualifications in international standardization organizations and bodies such as ITU-R/T/D, APT, ETSI, and 3GPP.

(3) As a result of these activities, NICT contributed to the establishment of 21 international standards in FY2017 reflecting its

R&D results including IEEE Standard 802.15.3d-2017 (Fig.2) titled "100 Gb/s Wireless Switched Point-to-Point Physical Layer" (the world's first terahertz-wave radio communications international standard) and other standards in fields such as wireless networks, optical access infrastructures, space weather, standard time, electromagnetic environment, and security. Change over time in the number of international standards established is shown in Fig.3.