NII News No.1 2000
National Institute of Informatics

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National Center of Sciences Building Ribbon Cutting Ceremony (March 16)

National Institute of Informatics Established

On April 1, 2000 the National Institute of Informatics (NII) was established as an inter-university research institute with the aims of conducting comprehensive research in the field of informatics and the development and implementation of an advanced infrastructure for the dissemination of academic information.

NII is charged with the task of promoting research and development work in information and computer science fields such as software, information infrastructure, information media. This work is to be undertaken based on a long-term perspective and will range from basic to applied subjects. In addition, the institute strives to provide comprehensive support for informatics research, with a particular emphasis on collaborative joint research involving universities, research institutions, and industrial sector companies throughout Japan. In addition, NII hopes to contribute to the development of scholarly work in all fields as well as the advancement of industry, culture, and daily life in Japan by constructing and supplying an advanced infrastructure for academic information.

The roles of NII in research work in informatics, on the one hand, and development work and projects related to the advanced infrastructure for academic information, on the other, can be thought of as wheels of a car. The salient characteristic of these two major roles is that they must progress together as part of a single system. In keeping with this idea, NII will continue to provide the functions initiated by its predecessor, NACSIS, such as the Science Information Network and academic information services.

The National Center of Sciences Building, where the offices of NII are located, is shared by four organizations. These are, in addition to NII, the Hitotsubashi University Graduate School of International Corporate Strategy, the Center for National University Finance, and the National Institution for Academic Degrees. It is expected that this arrangement will result in the formation of a sophisticated base for intellectual creativity by utilizing in a comprehensive manner the academic functions of each of these four institutions.

Today's impressive advances worldwide in information and communication technology bring with them both enormous possibilities and a number of issues that need to be addressed. Based in the new National Center of Sciences, NII hopes to assist in the advancement of both research and applied projects, in response to the demands of the era, as we move into a new "century of information." (Publicity and Survey Division)

Aiming for New Advances in Informatics Research

Hiroshi Inose

Director General, National Institute of Informatics

Hiroshi Inose

Dr. Inose graduated from the Second Faculty of Engineering of the University of Tokyo in 1948 and later earned a doctorate in engineering. After serving as a professor and later head of the Faculty of Engineering at the University of Tokyo, he was appointed Director General of NACSIS in 1987. He assumed his present post as Director General of NII in April 2000. His fields of specialization are telecommunications engineering and science and technology policy. In addition to serving as chairman of the Information Processing Society of Japan and the Institute of Electronics, Information, and Communication Engineers, Dr. Inose is a member of the National Academy of Sciences (U.S.A.), the Royal Swedish Academy of Sciences, and the Royal Society (British Academy of Science). He has received numerous awards, including the Marconi International Fellowship (1976), the Japan Academy Prize (1979), and the Order of Culture (1991).

The remarkable advance of information and computer technology in the past few years has brought with it a growing dependence on information in all aspects of our socioeconomic activities. It was as a positive response to this trend that the government established the Advanced Information and Telecommunications Society Promotion Headquarters in 1994, with the Prime Minister at its head. Its work got underway under basic guidelines aimed at the promotion of e-commerce, increased use of computers in public fields, including academic research, improving the general level of computer literacy, enhancement of the network infrastructure, encouragement of research in fields related to IT and computers, formulation of measures for dealing with high-tech crime, supplying of software, assuring interoperability, and the proposing of international initiatives. This body was reorganized as the IT Strategy Council in 2000, and it is hoped that this new organization will be even more active than its predecessor.

The mission of the field of academic research is to provide leadership for the nation's socioeconomic activities. This field is extremely dependent on information technology, and the technologies employed have become exceedingly sophisticated. An awareness of this situation can clearly be seen in the guidelines listed above. That increased use of computers in academic research, enhancement of the network infrastructure, and encouragement of research in fields related to IT and computers are identified as key issues is proof of this. The academic sector is also eager to see these goals realized. In 1997 the Science Council of Japan issued a report entitled "Promoting Computer Science Research." This was followed in 1998 by one entitled "Policy for Promoting Informatics Research" from the Science Council of the Ministry of Education, Science, Sports and Culture (MESSC).

Based on the recommendations in these reports, MESSC determined to establish a core informatics research institution, to be set up as an inter-university research institute. This institution would grow out of NACSIS, which would be reorganized and expanded in order to create it. The result is the National Institute of Informatics (NII), which was officially launched in April 2000. The aims of the new institute are comprehensive research and development work related to information and computers; the development and implementation of an academic information infrastructure, the performance of tasks related to the utilization of academic information, and assisting in the fostering of specialists in the information and computer field. The formation of NII entails the continuation and large-scale expansion of the functions previously performed by NACSIS, which was established as an inter-university research institute in 1986, and sets the stage for rapid advances in the years to come.

First of all, informatics in the broadest sense of the term will be the focus of research, which will range from topics concerned with basic theory to those covering applications with relevance to society at large. This research will be comprehensive and interdisciplinary in scope. In particular, we can look forward to a beefing up of basic theoretical work in informatics and software research, as well as more attention being devoted to fields bringing together elements of culture, the humanities, sociology, and science, such as information systems theory.

Second, the information infrastructure essential for academic research must be sophisticated and advanced in all aspects: networks, content, and applications. With the establishment of NII it will now be possible to promote varied R&D work for responding to this need and quickly to plow back the fruits of research in the implementation and enhancement of the academic information infrastructure. In order to ensure that these two aspects, R&D work and practical application, will advance together like the wheels of a bicycle, the Research Center for Testbeds and Prototyping and the Research Center for Information Resources have been established. The union catalog database developed by NACSIS with the cooperation of university libraries throughout Japan is already one of the largest databases of its kind in the world. Promoting the further development and utilization of this resource, further enhancement of the Electronic Library Service in close collaboration with scholarly societies and libraries, and the improvement of full-text retrieval functionality will be among the key tasks of these two new centers in the years ahead.

Third, the training of personnel for the informatics field has become an urgent concern. We can look forward to a new level of joint research and joint use through developments such as even closer collaboration with the University of Tokyo and the Graduate School of the University of Library and Information Science, the establishment of a new organization of graduate schools, and heightened cooperation with private sector, government, and university research institutes both in Japan and overseas.

The establishment of NII is the result of the boundless understanding and assistance provided by many parties, especially MESSC, and I am profoundly grateful to your all for your efforts. I hope for your continued guidance and support in the years ahead.

Research Aims of NII

Kinji Ono

Executive Director for Research, National Institute of Informatics

Kinji Ono

Prof. Ono graduated from the Faculty of Science, the University of Tokyo in 1962, got his MS at Stanford University in 1972, and Dr. of Engineering from the University of Tokyo in 1983. After serving as Director of the Research Laboratories of KDD as well as Professor and Director of R&D at NACSIS, he was assigned his current post in April 2000. His field of specialization is information engineering. Dr. Ono has received numerous awards, including the Research Meritorious Award of the Science and Technology Agency (1984), the Achievement Award of the Institute of Electronics, Information, and Communication Engineers (1992), and Fellow of IEEE (Institute of Electrical and Electronics Engineers, U.S.A.) (1994).

The advancement of information technology, especially the Internet, has resulted in startlingly rapid changes in the way we conduct our socioeconomic activities. Our society is becoming an advanced infomation society in which information technology plays an indispensable role.

Our society is changing from material-centered society into one in which information is the key element. As a result, the establishment of a fundamental and interdisciplinary research on information and computers has become an urgent and important issue for Japan.

NII was established on April 1, 2000 as Japan's sole inter-university research institute with informatics as its focus.

At around the time I came to work for NACSIS, the predecessor of NII, Vice President Gore of the United States announced his NII (National Information Infrastructure) concept. It is a well-known fact that this initiative became a driving force for economic activity and led to an unprecedented period of prosperity for the United States, with regions such as Silicon Valley playing a leading part.

In Japan as well the field of information technology is advancing rapidly, and it has assumed enormous importance for its role in supporting academic research and also in contributing new vitality to industry and society as a whole.

I have participated in the comittee over information and computer research as a member of the Informatics Research Liaison Group of the Science Council of Japan as well as the Science Council of the Ministry of Education, Science, Sports and Culture (MESSC), and helped to draft the various reports and proposals. The establishment of NII is therefore a deeply moving event for me.

Informatics, the focus of NII's work, is a new academic field embracing the existing disciplines of computer science and information engineering, which focus on the aspect of computers and computing, while integrating in a comprehensive manner a wide range of issues related to information in the life sciences, human and social sciences. Informatics is a discipline aiming at providing a foundation for academic work in all fields, while working with other academic fields to create new research topics and methods, and ultimately making a substantial contributions at various levels to industry, culture, education, and our daily lives.

The mission of NII is to contribute both to academia and to society as a whole. Specific goals include the establishment of informatics as a comprehensive academic discipline, research on information and computers ranging from the basic to the applied, and the development of an information infrastructure. Based on this, we have set up seven research divisions devoted to the areas of foundations in informatics, information infrastructure, software, information media, intelligent systems, human and social information, and academic research information.

Furthermore, two research centers have been established to work on the application and further development of new ideas, to engage in interdisciplinary research and to work on the practical implementation of the information infrastructure. In addition to the above, NII places considerable emphasis on providing support for other researchers, the formation of organizations related to the implementation of the information infrastructure, basic and fundamental research on information and computers carried out from a long-range viewpoint, the promotion of research projects, cooperation in the development of new types of business endeavors, and the promotion of international joint research.

One of the important issues for the twenty-first century is the formation of a framework that allows science and technology to develop in ways they truly benefit human society. In the future, informatics research will bring about as yet unforeseen changes in our social and economic activities through the creation and utilization of knowledge, as well as fields such as biotechnology, which is expected to advance rapidly in the years ahead.

NII continues its endeavor to achieve new developments in the twenty-first century both to promote research in a comprehensive manner and to support Japan's academic information infrastructure. We ask for your continuing support and assistance in this endeavor.

Research and Development Work at NII

Mitsutoshi Hatori

Director, Development and Operations Department,
National Institute of Informatics

Mitsutoshi Hatori

Dr. Hatori completed the Ph.D. program of the Graduate School of Engineering of the University of Tokyo in 1968. After serving as a professor of the Faculty of Engineering at the University of Tokyo and as a professor at NACSIS, he assumed his current posts (Director of the Development and Operations Department and Director of the Multimedia Information Research Division) in April 2000. His fields of specialization are electrical communications engineering and broadcast engineering. Dr. Hatori has served as Deputy Chairman of the Institute of Television Engineers and as Chairman of the Institute of Image Information and Television Engineers. He has received numerous awards, including the Minister of Posts and Telecommunications Award for Distinguished Contribution to Telecommunications (1995), an IEEE Fellowship (2000), and the NHK Broadcasting Culture Award (2000).

Today, with the advent of the twenty-first century immediately before us, the world's advanced countries are eagerly investing in research in the information and computer field. Advancing informatics research is a pressing issue if society is to realize the full potential offered by sophisticated information technology.

In Japan as well academic research work needs to be strengthened without delay, with further development of informatics research covering a broad range of topics, from the basic to the applied, forming the foundation for advancement in all academic fields, with a particular emphasis on information related fields such as software, information infrastructures, and information media.

NII was established through a reorganization and expansion of NACSIS with the goal of making a significant contribution to the development of all academic fields and the enhancement of industry, culture, and people's lives. It aims to accomplish this by promoting research in the field of informatics and by building and providing access to an advanced academic information infrastructure.

The functions of NII include using the fruits of informatics research to further improve the effectiveness of the academic information infrastructure, which is indispensable for the promotion of academic research. While working to form an organic synthesis with practical research work, it will use data obtained from the implementation and operation of the academic information infrastructure to help identify new topics and motivations for informatics research. In other words, the implementation and operation of the academic information infrastructure is a cycle in which the germs produced by informatics research are nurtured into full bloom. It begins with informatics research and advances through practical research to the actual implementation and operation of the academic information infrastructure. This is the key characteristic of NII, and I feel this unique character deserves to be further strengthened and developed.

By forming organizations and systems that allow researchers to participate in the implementation of the academic information infrastructure in close collaboration with the research organizations (the research divisions and research centers), the research findings produced can then be applied and utilized in a practical manner. In order to contribute to the implementation and enhancement of Japan's academic information infrastructure in this way, the Development and Operations Department aims to develop and implement an advanced infrastructure (consisting of information and network resources) to provide technical and practical support for the research work of research organizations and also facilitate the distribution of academic information.

The core of the Development and Operations Department is composed of the following projects, all of which are related to providing access to the academic information infrastructure in its present form:

- Catalog Information Service
- Information Retrieval Service
- Electronic Library Service
- Online Journal Editing and Publication Project
- Science Information Network
- Computer Systems
- International Projects
- Education, Training, and Information Dissemination Activities

Each of these projects will continue in the years ahead to promote the further development and enhancement of the academic information infrastructure in ways such as the strengthening of software functionality, the expansion of available content, network growth, improved network security, encouragement of international exchange of academic information, and the development of new projects.

We can look forward to major advances in the IT field in the years ahead. This means that the importance of NII's role as a key institution for informatics research and the distribution of academic information will continue to grow.

In order to properly carry out the heavy responsibility of providing an information infrastructure adequate to support the development of scholarship in Japan, in response to the demands of the changing times, we will continue to do our utmost, working closely with the research divisions and research centers. At the same time, all of us at NII are endeavoring earnestly to contribute to the advancement of scholarship in Japan and throughout the world. We hope for your continued guidance and support in the years ahead.

Papillon International Seminar (Online Japanese-French Dictionary Development Project)

The Papillon International Seminar, a seminar on a project to develop a Japanese-French dictionary that will be accessible online via the Internet, was held on the 10th and 11th of August in a seminar room at NII. This seminar was organized jointly by the French Embassy and NII.
The project is supported by the Science and Technology section of the French Embassy. It is the result of an agreement to form a French-Japanese group to perform joint research on meta dictionary reached between the CLIPS (linguistic communication between people and systems) laboratory at Joseph Fourier University of Grenoble, France, the LIRMM (Montpellier Laboratory of Information, Robotics, and Microelectronics) laboratory at the University of Montpellier, and NII.
The seminar was attended by 12 researchers from France, four from the French Embassy, five from NII, and three other participants. After the attendees had each introduced themselves, Dr. E. Planas of Joseph Fourier University, who is responsible for promoting the project, provided an overview and greeting, which was followed by a keynote speech from Dr. Kinji Ono, NII's Executive Director for Research. The participants then discussed the technical issues associated with the project and specific policies for moving it forward. It was agreed that the project would be open to anyone, Japanese, French, or otherwise, who wished to volunteer in the compilation of the dictionary.

The second Papillon International Seminar is scheduled to be held in Grenoble, France in July 2001.

(Frédéric Andres, Associate Professor,
Software Research Division)

Introduction: Dr. François Paradis

"G' day!" When I was asked to prepare an article for the NII newsletter, I suddenly realised it's been 4 months already since I arrived at NII as a visiting researcher. I come from CSIRO, Australia's national research organisation. My group, lead by Dr. Ross Wilkinson, conducts research in technologies for electronics documents. Like NII, we are interested in international collaboration, and one of my goals in coming here was to open the door for such collaboration.

My background is in Information Retrieval and Document Processing, and my current research interests revolve around virtual documents and their application to customised delivery and information retrieval. In particular, I'm trying to use logical and discourse structure to improve both retrieval and delivery.

During my stay at NII, I have worked with Dr. Noriko Kando (also in collaboration with Queen Mary College in London) to build a "structured" test collection, i.e. making use of hypertext and logical structure of documents. We are currently gathering gigabytes of textual and multimedia information about art on the Web, and Dr. Kando has made contact with museum people who will hopefully help us design queries. Also, I have talked to Dr. Atsuhiro Takasu about their software library project, and started research on automatic markup of structure.

My stay at NII is nearly over, as I'm leaving at the end of October, and I would like to take this opportunity to thank Dr Kando, who invited me, and all at NII who have made my visit not only possible, but also very enjoyable. I will go back to Australia with fond memories of karaoke!

(Dr. Françis Paradis)

Dr. Paradis was dispatched to NII by the Australian government. He has been conducting research at NII from May 1 through October 31 of this year.

Online Scientific Terms Service Launched

NII launched an Online Scientific Terms Service on July 12, 2000.
In order for academic research findings to be disseminated broadly and to be evaluated and verified correctly, researchers must share a common understanding of the definitions of meaning and usage of the terms (especially scientific terms) used. To assist in the formation of such as common understanding, scholars in a variety of academic disciplines' work to standardize the scientific terms used in their fields, and glossaries of technical terms have been published for many fields of study. The Online Scientific Terms Service allows the public to search via the Internet a database of glossaries of scientific terms. The rights to use the content of these glossaries have been granted to NII by their copyright holders, which include the Ministry of Education, Culture, Sports, Science and Technology various academic societies. An overview of the new service is provided below.

1. Name of Service
   English Name: Online Scientific Terms
   Abbreviation: NACSIS-Sciterm

2. Usage
   The service can be accessed using a Web browser. (http://sciterm.nii.ac.jp/)
   Select the glossaries (sections) you wish to search, enter the search term, and information on the specified term is displayed.

3. Record Items
   Term (Japanese, reading in romanized text, reading in katakana, equivalent term in English (or other western language)), part of speech, field, reference term, notes

4. Availability
   In principle, the service is available 24 hours a day year round. However, there may occasionally be service interruptions due to system maintenance.

(Application Division)

Support for the Computerization of the Library of the Beijing Center for Japanese Studies

As part of the "Science Information Exchange Project with China" and with the assistace of the Japan Foundation, NII has been assisting in the computerization of the catalog records of the Library of the Beijing Center for Japanese Studies since fiscal 1998.
During the current fiscal year an NII team consisting of Shigeru Takano, Deputy Director of the Development and Operations Department, and three other persons visited the Beijing Center for Japanese Studies from June 18 to 25 to offer advice and guidance related to matters such as the operation of the library's system and the inputting of data. In response, three librarians of the center, Qian Junqiang, Yuan Hong, and Li Lin, visited Japan between July 17 and 29 and underwent training, including procedures for using NACSIS-CAT, at NII from July 18 to 25. This was followed by further training at the Saga University Library from July 26 to 28.
During this same period Yan Ansheng and Xu Yiping, the Director and Vice Director of the Beijing Center for Japanese Studies paid a visit to NII. Together with the three librarians undergoing training, they paid a courtesy call on Director General Inose on July 18 and attended the Science Information Exchange Project with China Meeting held on July 25. The Beijing Center for Japanese Studies plays a central role in Japan studies in China, and it is expected that the computerization supported by this project will enable it to function at an even higher level in the years ahead.

(Publicity and Survey Division)

Courtesy Call on Director General Inose by Director Yan and Staff (July 18)

Training at NII

“Science Experiment Classroom” at NII

A visiting programme of National Institute of Informatics was held by co-organising with The Institute of Electronics, Information and Communication Engineers and The Science Club of Science Museum, as a part of Science experiment classroom, on August 22. This programme has been held since 1998, with the intention of enlightening elementary and junior high school students on science. About 20 children and their parents participated in this time.

The theme of the programme was The Internet is the Wherever Door. Held in one of NII’s computer education rooms, it featured easy-to-understand explanations of how the Internet works by Kinji Ono, the Executive Director of Research, and NII staff members. The main segments of the programme were as follows:

Introduction to NII

Kinji Ono, Executive Director of Research

Hidden Aspects of the Internet

Lecturer: Assistant Professor Akiko Aizawa

Dr. Aizawa explained how search engines are used to look for information through the Internet and also how computers locate information.

Using the Internet as a Study Tool

Lecturer: Research Associate Tomo’o Inoue

Dr. Inoue explained about the HTML markup language used to send information over the Internet and described the Interlibrary Loan self-learning system developed by NII.

Experiencing the Internet

The participants also were given time to explore the Internet on their own, displaying Websites using lists of links prepared ahead of time, searching for information and displaying matching Web pages, and so on.

(Dissemination Activities Division)

Karuizawa Saturday Seminar in Summer

NII’s International Seminar House for Advanced Studies was established in Karuizawa, Nagano Prefecture to serve as a venue for international exchange. It is used for international meetings, seminars, and training sessions by universities and other institutions. This summer, NII held a series of Fiscal Year 2000 Karuizawa Saturday Discussion Meetings aimed at local Karuizawa residents at the International Seminar House for Advanced Studies. A listing of the dates of these presentations, the lecturers, and their titles is provided below.

July 15
- Lecturer: Hiroshi Inose, Director General, National Institute of Informatics
- Topic: Hoping to Create a Nation with an Intellectual Presence

July 22
- Lecturer: Kimio Ono, President, Hokkaido Information University
- Topic: The Virtual University and I

July 29
- Lecturer: Tokuo Tezuka, Professor, Tokyo National University of Fine Arts and Music
- Topic: From My Production Notes: An Outdoor Installation of Owls

September 2
- Lecturer: Christopher Yomei Blasdel
- Topic: Shakuhachi Odyssey: Bewitched by Heavenly Tone Colors

September 9
- Lecturer: Junko Otsu
- Topic: Junko Otsu Violin Recital: Sounds of Change

(Dissemination Activities Division)

Director General Inose Awarded IEEE Millennium Medal

NII Director General Hiroshi Inose was selected by the IEEE (Institute of Electrical and Electronics Engineers, U.S.A.) as a recipient of the Millennium Medal. This award is part of a millennium commemoration organized by the IEEE, and its recipients were chosen for their meritorious achievements in the field of electrical and electronic engineering based on recommendations from the academic societies which constitutes the IEEE. Dr.Inose attended the IEEE International Conference on Communications held from June 18 to 22 and was awarded the Millennium Medal as part of the conference proceedings.

Dr. Inose was previously awarded the Alexander Graham Bell Medal by the IEEE in 1994.

(Publicity and Survey Division)

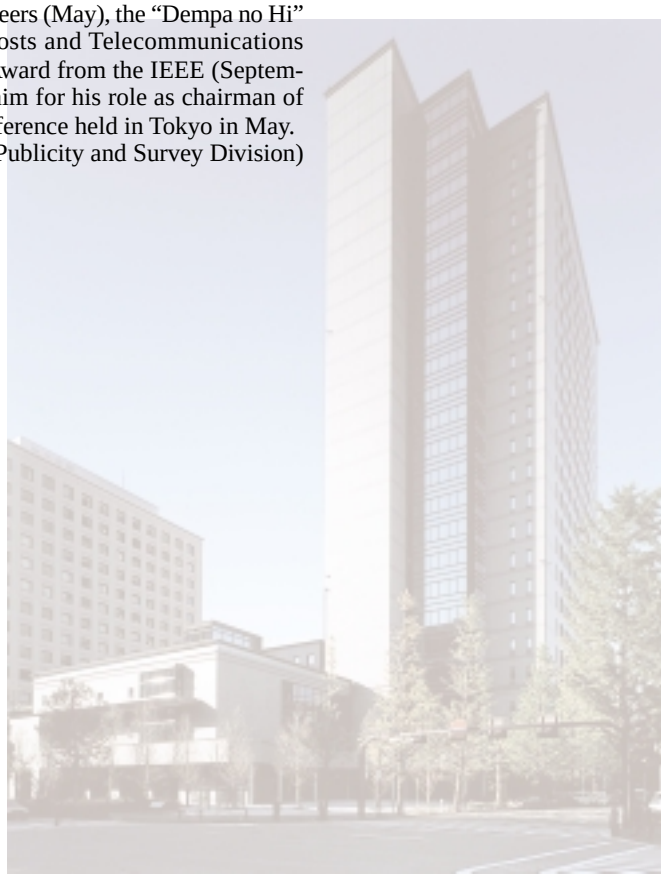
Professor Hatori Receives NHK Broadcasting Culture Prizes

NII Professor Mitsutoshi Hatori (Director of the Development and Operations Department and Director of the Multimedia Information Research Division) was selected to received the 51st NHK Broadcasting Culture Prizes. The Broadcasting Culture Prizes honor persons who have contributed to the development of broadcasting in Japan. The reasons cited for the Selection of Professor Hatori to receive this honor were "his leading role in research on broadcasting and communications technology, which has contributed to the realization of a significant body of research, his advanced work on the high-efficiency encoding of video signals, his guidance in the establishment of Japan's HDTV standard, his assistance in the development of broadcasting technology for the age of satellite broadcasting, and his contributions to broadcasting culture."

Additional honors recently awarded to Professor Hatori include the Achievement Award from the Institute of Image Information and Television Engineers (May), the "Dempa no Hi" award from the Minister of Posts and Telecommunications (June), and the Achievement Award from the IEEE (September), which was presented to him for his role as chairman of the Vehicular Technology Conference held in Tokyo in May.

(Publicity and Survey Division)

Professor Hatori (Right) Accepts the NHK Broadcasting Culture Prizes from the President of NHK Ebisawa at the "Commemoration for the 75th Anniversary of Broadcasting"
(Photograph provided through the courtesy of NHK Science & Technical Research Laboratories)



Detailed information on the research and projects of NII is available at our Website. http://www.nii.ac.jp/index.html

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