National Institute of Informatics
2008-2009

Weaving Information into Knowledge

NII

Contents

Greeting from the Director General

Needless to say, academic research organizations are now under increased pressure to clarify their missions and roles, plan and implement unique activities, and effectively demonstrate their various successes.

The National Institute of Informatics (NII) has designated the following missions and roles: To create future value (create scholarship) as Japan's sole comprehensive academic research institute in the field of informatics; to attain the status of a national center for informatics research activities; and to spearhead and develop service operations related to the academic information infrastructure (academic networks and contents) — a task vital to the research and education activities of today's academic community overall. Through the above efforts, the NII aims to realize the effective contributions internationally as well as to domestic society.

These missions have now reached a particularly important stage, after the ten-year history from the IT boom to IT bubble collapse. The field of informatics thus needs to demonstrate new theories, methodology, and applications (future value) that can generate new types of actual value for human and society. In addition, needs are growing as regards the formation of a 'Cyber Science Infrastructure (CSI)' that organically combines elements such as shared ultra-high-speed networks, research resources, and science software and databases, as well as human resources, in order to realize global competitiveness in broader-ranging research and industrial and education activities. The need is therefore urgent to develop academic information infrastructure that will lead seamlessly to that of the next generation. Science Information Network (SINET3) that launched in last year, and next generation science contents infrastructure formation by cooperation with universities is parts of the concrete result.

The NII intends to focus its efforts on fulfilling these missions by further strengthening its research structure and by making the institution more accessible.

We look forward to the continued understanding and support of all related parties.

Masao Sakauchi

Director General, National Institute of Informatics

April 2008

History

1973	October	Ministry of Education, Science, Sports and Culture proposes an "Improved Circulation System for Academic Information" in the Third Report (Basic Policies for the Promotion of Scholarship) of the Science Council.
1976	May	Research Center for Library and Information Science (RCLIS) is established at the University of Tokyo.
1978	November	"A New Plan for Academic Information Systems" is presented to the Science Council by the Minister of Education, Science, Sports and Culture. The Science Council issues a response in January 1980.
1983	April	Center for Bibliographic Information is established at the University of Tokyo, with the reorganization of the Research Center for Information and Library Science.
1986	April	National Center for Science Information Systems (NACSIS) is established, with the reorganization of the Center for Bibliographic Information, University of Tokyo.
1997	March	International Seminar House for Advanced Studies (Karuizawa, Nagano Prefecture) is established.
2000	February	Operations move to a building in the National Center of Sciences (Hitotsubashi, Chiyoda-ku, Tokyo).

1997	December	An Advisory Panel on a Core Institution for Scientific Research in the Information Field is established by the Ministry of Education, Science, Sports and Culture.
1998	January	A proposal entitled "Promoting Computer Science Research" is published by the Science Council of Japan, calling for the establishment of a core institution for inter-university research in informatics.
1998	March	Advisory Panel on a Core Institution for Scientific Research in the Information Field issues its report.
1998	April	Coordination Office is established for the Core Institution for Scientific Research in the Information Field; committee is formed in May.
1999	March	Coordinating Committee of the Core Institution for Scientific Research in the Information Field issues its report.
1999	April	Preparatory Office is established for the Core Institution for Scientific Research in the Information Field; committee is formed in May.
1999	July	Preparatory Committee of the Core Institution for Scientific Research in the Information Field issues its interim report.
2000	March	Preparatory Committee of the Core Institution for Scientific Research in the Information Field issues its final report.

2000	April	National Institute of Informatics (NII) is established, with the reorganization of NACSIS and assumption of its functions.
2002	April	Ph.D. Program in Informatics is established in the Department of Informatics, Graduate University for Advanced Studies.
2002	September	Research Planning and Promotion Strategy Office is founded.
2002	October	International Course is established within Ph.D. Program in Informatics.
2003	January	Global Liaison Office is formed.
2003	April	National Research Grid Initiative (NAREGI) begins. Initiation of Project to Improve Infrastructure for International Circulation of Scholarly Information

2004	April	NII begins a new chapter as a member of the new Inter-University Research Institute Corporation / Research Organization of Information and Systems.
2005	April	The official service of GeNii (NII Academic Contents Portal) is launched.
2007	April	Science Information Network (SINET3) is launched.

Administrative Council

Members advise the Director General regarding plans for NII projects and other important matters related to management and operations.

Setsuo Arikawa	Trustee, Kyushu University	Yohichi Tohkura	Deputy Director General, NII
Miwako Doi	Chief Research Scientist, Toshiba R&D Center	Asao Fujiyama	Director, Principles of Informatics Research Division, NII
Sadaoki Furui	Professor, Department of Computer Science, Graduate School of Information Science and Engineering, Tokyo Institute of Technology	Shinichi Honiden	Director, Information Systems Architecture Science Research Division, NII
Haruhisa Ichikawa	Professor, The Department of Human Communication, The University of Electro-Communications	Keizo Oyama	Director, Digital Content and Media Sciences Research Division, NII
Toyoaki Nishida	Professor, Department of Intelligence Science and Technology, Graduate School of Informatics, Kyoto University	Noboru Sonehara	Director, Information and Society Research Division, NII
		Kenichi Miura	Director, Center for Grid Research and Development, NII
Shojiro Nishio	Trustee/Vice President, Osaka University	Akihiko Takano	Director, Research and Development Center for Informatics of Association, NII
Yoichi Muraoka	Professor, School of Science and Engineering, Waseda University	Shigeki Yamada	Director, Research and Development Center for Academic Networks, NII
Hidehiko Tanaka	Director, Graduate School of Information Security, Institute of Information Security	Noriko Arai	Director, Research Center for Community Knowledge
Mario Tokoro	Senior Vice President, Sony Corporation	Jun Adachi	Director, Development and Operations Department, NII
Yoshifumi Yasuoka	Executive Director (Research), National Institute for Environmental Studies	Tomohiro Yoneda	Head, Department of Informatics, School of Multidisciplinary Sciences, The Graduate University for Advanced Studies

Advisory Board

Advisory Council for Research and Management Members provide advice and suggestions to the Director General regarding joint research programs and other important matters related to the operation of NII, in response to requests from the Director General.

Masanori Aoyagi	Executive Director of the National Museum of Western Art	Lotfi A. Zadeh	Professor, University of California, Berkeley
Tomonori Aoyama	Professor, Research Institute for Digital Media and Content, Keio University	Takeo Kanade	Professor, Carnegie Mellon University
Setsuo Arikawa	Trustee, Kyushu University	Gerard van Oortmerssen	Director, TNO Telecom
Takashi Hanazawa	Director and Senior Vice President, Director of Research and Development Planning Department	Michel Cosnard	CEO, INRIA
		Thomas Coleman	Professor, Waterloo University
Shinichi Iwasaki	Director, Software Engineering Division, NEC Corporation	Wolfgang Wahlster	Director and CEO, The German Research Center for Artificial Intelligence and a Professor of Computer Science at Saarland University
Masafumi Maeda	Director General, Institute of Industrial Science, the University of Tokyo		
Teruyasu Murakami	Chief Corporate Counselor, Nomura Research Institute, Ltd.	Marek Rusinkiewicz	Vice President and General Manager, Telcordia's Information and Computer Sciences Research
Makoto Nagao	Librarian of the National Diet Library	Ramesh Jain	Professor, University of California, Irvine
Shojiro Nishio	Professor and Director, Graduate School of Information Science and Technology, Osaka University	Bob Williamson	Scientific Director, NICTA (National ICT Australia)'s Canberra research laboratory.
Yasutaka Shimizu	President, National Institute of Multimedia Education	Jeff Kramer	Dean, The Faculty of Engineering & Professor of Distributed Computing Distributed Software Engineering, Imperial College London
Mariko Takahashi	Science Editor, Asahi Shimbun		
Akinori Yonezawa	Director, Information Technology Center, The University of Tokyo	Michael A. Keller	Ida M. Green University Librarian, Director of Academic Information Resources, Publisher of HighWire Press, and Publisher of the Stanford University Press
		Dae-Joon Hwang	President, KERIS (Korea Education and Research Information Service)
		Yi Zhang	Director for Office, International Cooperation and Exchange, Tsinghua University
		Thaweesak Koanantakool	Vice President, The NSTDA (National Science and Technology Development Agency)

Advisor (National Institute of Informatics)

Yasuharu Suematsu	Former Director General, NII

Professors Emeriti (NACSIS: National Center for Science Information Systems)

Kimio Ohno	Former Deputy Director General, NACSIS	Hisao Yamada	Professor Emeritus, University of Tokyo
Atsunobu Ichikawa	Professor Emeritus, Tokyo Institute of Technology	Hitoshi Inoue	Former Deputy Director General, NACSIS
Tatsuo Nishida	Professor Emeritus, Kyoto University		

Professors Emeriti (NII : National Institute of Informatics)

Takamitsu Sawa	Director General, Institute of Economic Research, Kyoto University	Kinji Ono	Visiting Professor, Waseda University
Mitsutoshi Hatori	Professor, Faculty of Science and Engineering, Chuo University	Takeo Yamamoto	Former Director, Multimedia Information Research Division, NII
Yasuharu Suematsu	Former Director General, NII	Haruki Ueno	Former Professor, Principles of Informatics Research Division, NII
Eisuke Naito	Professor, Faculty of Sociology, Toyo University		

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Future Value Creation through Informatics by

As Japan's only general academic research institution seeking to create future value in the new discipline of informatics, the National Institute of Informatics (NII) seeks to advance integrated research and development activities in information-related fields, including networking, software, and content. These activities range from theoretical and methodological work to applications. As an inter-university research institute, NII promotes the creation of a state-of-the-art academic-information infrastructure (the Cyber Science Infrastructure, or CSI) that

International

Academic Community
University, Research Institute,
and Academic Society, etc.

Information Systems Architecture Science Research Division

Digital Content and Media Sciences Research Division

Organization for Value Creation in Informatics

Principles of Informatics Research Division

Research and Education

Information and Society Research Division

Transdisciplinary Research Integration Center
Research Organization of Information and Systems

Organization for Management and Outside Collaboration on R&D

Seven Centers*

Graduate Education

Organization for Science Network Operations and Coordination

Organization for Scientific Resources Operations and Coordination

Organization for Promoting Cooperation with Society and Industry

Advancing integrated research and education in the field of informatics

Informatics is a new academic discipline based not just only on computer science and information technology, but on the human, social, and life sciences. The NII advances informatics research with the goals of creating future value; furthering social and public contributions; promoting interdisciplinary approaches to information processing; partnerships among industry, government, academic, and civilian organizations; and international research activities and operations. The NII has established four research divisions, seven research centers, the Organization for Management and Outside Collaboration on R&D, and the Collaborative Research Unit.

Creating future value

Seeking to establish a new academic discipline through long-range promotion and systemization of a broad range of informatics research, ranging from the natural sciences through the human and social sciences, the NII contributes to informatics development by creating future value (ranging from theoretical and methodological work through applications) throughout the discipline.

Social and public contributions

The NII seeks to achieve harmony between society, culture, and social systems, in addition to creating platforms and portals that encourage the establishment, searching, and use of content to develop, and enliven, and disseminate academic, cultural, educational, publishing, and environmental activities, as well as the social and public activities of localities, nonprofit organizations, and other entities.

Interdisciplinary approach to information processing

The NII promotes cross-functional interdisciplinary research and promotes synergistic efforts between academic disciplines to enable progress in new and developing domains. Established in April 2005 at the Research Organization of Information and Systems, the Transdisciplinary Research Integration Center undertakes interdisciplinary research across a broad range of fields, seeking to elucidate issues in the life and earth system sciences.

Advancing Research and Operations in Tandem

is essential to research and education within the broader academic community, with a focus on partnerships and other joint efforts with universities and research institutions throughout Japan, as well as industries and civilian organizations.

Founded in April 2000, the NII marked its new beginning in April 2004 as a member of the Research Organization of Information and Systems.

Society
The People and Administration,Community, Industry,Region,and NPO,etc.

Science Information Network

Operations
Construction and operation of Cyber Science Infrastructure

Academic Content

Education and Training Program
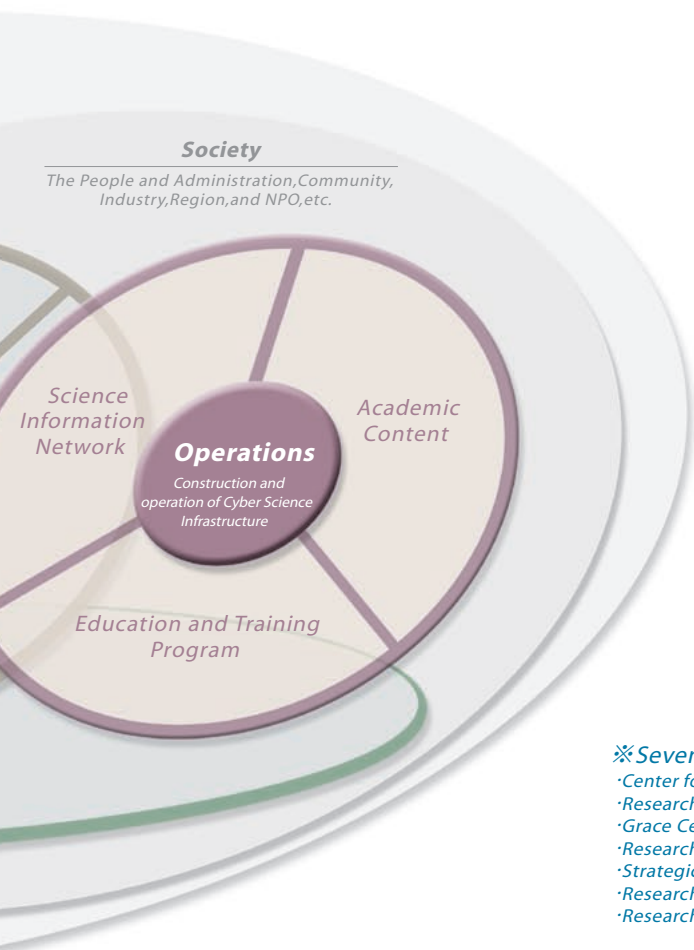
※ *Seven Centers*
· *Center for Grid Research and Development*
· *Research and Development Center for Informatics of Association*
· *Grace Center: Center for Global Research in Advanced Software Science and Engineering*
· *Research Center for Community Knowledge*
· *Strategic Research Projects Incubation Center*
· *Research and Development Center for Academic Networks*
· *Research and Development Center for Scientific Information Resources*

Promoting the Cyber Science Infrastructure (CSI)

The NII advances the formation and operation of the CSI, a state-of-the-art academic information infrastructure. Through these efforts, the entire research organization — comprising the Organization for Scientific Network Operations and Coordination and the Organization for Scientific Resources Operations and Coordination, that which plan and manage partnerships and cooperation with universities and other institutions throughout Japan; the Cyber Science Infrastructure development Department, that which handles development and operation of information systems; and the research centers that promote researcher participation and incorporation of the results of research — contributes to the academic community.

Partnerships among industry, government, and academic sectors

The NII enjoys close ties to and works in close partnership with universities and public and private research institutions. Joint efforts include research projects and human resource development, as well as activities promoting the utilization of research results based on partnerships with civilian organizations, as represented by localities and nonprofit organizations.

International research activities

The NII strives to expand its informational reach to the international community through the sharing of academic information with overseas researchers and conducting joint research with overseas research institutions. Such efforts are based on memoranda of understanding (MOUs) on international exchange concluded with universities and research institutions from around the world. The NII also engages in the development of an infrastructure for international distribution of scientific information and international academic networks.

Graduate education and human resource development

At the Graduate University for Advanced Studies, the NII has established an interdisciplinary Ph.D. program in Informatics to achieve mid-to long-term growth — both qualitative and quantitative — in researchers and engineers in the field of informatics. The NII has established a base for development of strategic human resources and seeks to train engineers with the skills to link the spheres of industrial and academic research.

Principles of Informatics Research Division

In the Principles of Informatics Research Division we seek to discover new principles, theories and methods in informatics, and extend our goal to pioneering the frontiers to try and achieve a paradigm shift in informatics.

## Algorithm for Fast Comparison of Huge Genome Data

Because we can now efficiently read genome sequences, their use is rapidly expanding in academia, such as in biology and archaeology, and in industries such as medicine and manufacturing. However, genome data are so huge that individuals can know only a small portion at any one time. We often analyze unknown genome data by comparing it with known genome data, but the huge genome size, 3 billion letters in the case of a human being, makes computational analyses difficult. Straightforward approaches often take a few years.

In this research, we developed an efficient algorithm for finding similar partial substructures from two genome sequences. A direct comparison of all partial structures in two 30 billion sequences needs roughly 1,000,000,000,000 billion comparisons. We use a mathematical method to reduce the amount of comparison dramatically and decreased it to 30 billion. This value is still large, but much smaller than the previous number. In fact the algorithm enables the computation time to be reduced to less than 1/10,000.

The figure is the result of a comparison of X chromosomes of a human and a mouse. The x-axis stands for human X chromosome, and the y-axis is mouse X chromosome, and black dots indicate that the corresponding substructures are similar. The random black dots are noise, whereas the diagonal segments correspond to similar substructures.

The algorithm took only 1 hour on a PC; without the algorithm, supercomputers would take several days to compute the same results.

(Takeaki Uno)
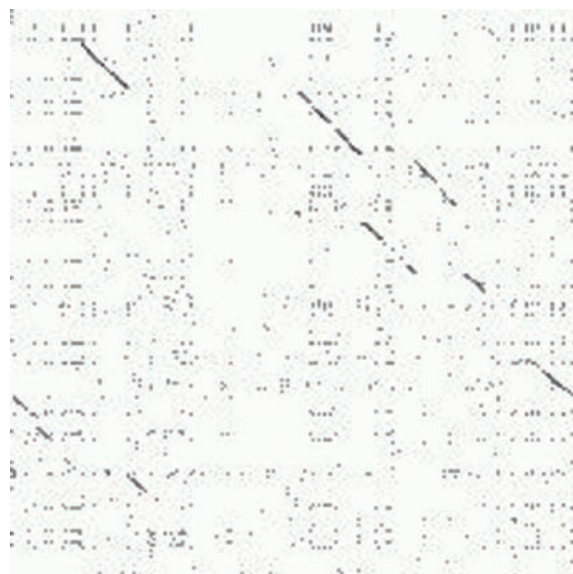
Qubus Computation: a new route towards scalable quantum information processing

Quantum information processing has attracted much attention as a future technology for ultra secure communication and hyper fast computation.For secure communication, quantum key distribution (QKD) has been developed to the point where it commercially viable and being sold. Some quantum technologies like QKD do not require the full power of quantum information processing, they process information a few qubits at a time.In contrast to such these "special" cases, our QIS group focuses on the more powerful "general" quantum information processing, which is applicable and capable to perform universal quantum computation.

In 2005, our QIS group at NII in conjunction with coworkers from HP Labs in Bristol proposed a new theoretical scheme as a fundamental technology for quantum information processing. This scheme is named "qubus computation", where qubus is from a quantum bus carries information between qubits making two-qubit processes possible. The scheme has an advantages in the flexibility with respect to computational models, physical systems, size scales and its efficient use of resources. Qubus computation has now developed into one of the main stream themes/techniques for QIP hardware implementations. At NII we investigate flexible and scalable QIP focusing on the distributed and hybrid natures. We also investigate applications of qubus QIP.

(Kae Nemoto)
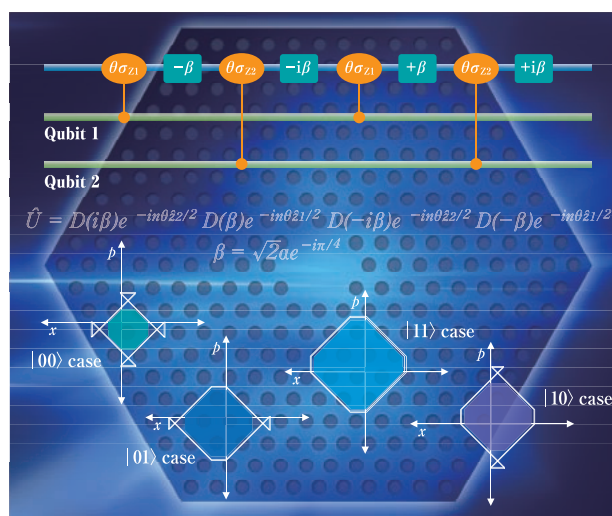
A schematic diagram of a qubus C-Phase gate

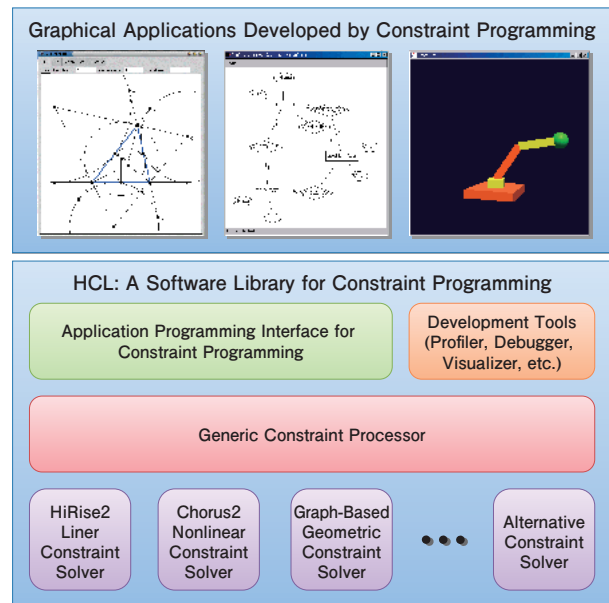# Information Systems Architecture Science Research Division

The Information Systems Architecture Science Research Division deals with the research issues in software/hardware architectures of computers and networks, and their system implementation.

Software Library for Constraint Programming

Constraint programming is a method of developing programs by specifying declarative constraints. It facilitates program development, since constraints are automatically satisfied by run-time system software, which frees programmers from the task of describing specific computation procedures.

We are constructing HCL, a software library for constraint programming. Aiming at graphical applications including graphical user interfaces, computer graphics, and information visualization, HCL allows the description and processing of various geometric constraints necessary for such applications. A major advantage of HCL is that it provides a common software platform for developing such graphical applications. This enables programmers to replace internal constraint solvers specific to kinds of constraints and solution methods, while they write application programs in a unified way. It also assists programmers by providing development tools such as a profiler, a debugger, and a visualizer. In addition, it has an embedded generic constraint processor, which makes it useful as a platform for the research and development of new constraint solvers; we are actually using HCL to conduct research on new algorithms for solving nonlinear and other constraints.

(Hiroshi Hosobe)

Graphical Applications Developed by Constraint Programming

HCL: A Software Library for Constraint Programming

Application Programming Interface for Constraint Programming

Development Tools (Profiler, Debugger, Visualizer, etc.)

Generic Constraint Processor

HiRise2 Liner Constraint Solver

Chorus2 Nonlinear Constraint Solver

Graph-Based Geometric Constraint Solver

Alternative Constraint Solver

Lightweight Data-Transfer Technique for Multi- and Many-Core Chips

As technology scales down to smaller dimensions, a large number of modules, such as processors, memory, and I/O, will come to be implemented on a single chip. In fact, multi- and many-core systems such as the Cell broadband engine used in PlayStation3 and Intel 80-core chips already exist.

Since the number of cores continues to increase, the network-on-chip between cores will eventually dominate chip performance in terms of area and power.

We thus propose a lightweight data-transfer technique called "BlackBus" (BlackBus is so-named because it allows cores to be connected by pseudo-wires.).

Although BlackBus data transfer uses a packet structure of multiple simultaneous data transfers, it achieves a simple datapath similar to that of a traditional bus using repeater buffers. It can be thus said that BlackBus data transfer has the advantages of both the packet structure and a traditional bus. By using static analysis of the access patterns generated in the target applications, such as parallel scientific computation, and cellular phone, BlackBus data transfer can forward a packet with only a 3-bit routing label to its destination in the case of 16 or 64 cores.

Moreover, to send data efficiently, we developed novel deadlock-free routing algorithms and a fault-tolerant mechanism, as a fundamental network-on-chip technique for multi- and many-core systems, and we demonstrated their efficiency.

(Michihiro Koibuchi)

References:
(1) Michihiro Koibuchi, Kenichiro Anjo, Yutaka Yamada, Akiya Jouraku, and Hideharu Amano, A Simple Data Transfer Technique using Local Address for Networks-on-Chips, IEEE Transactions on Parallel and Distributed Systems, Vol. 17, No. 12, pp. 1425-1437, Dec. 2006
(2) Akiya Jouraku, Michihiro Koibuchi, and Hideharu Amano, An Effective Design of Deadlock-Free Routing Algorithms Based on 2-D Turn Model for Irregular Networks, IEEE Transactions on Parallel and Distributed Systems, Vol. 18, No. 3, pp. 320-333, Mar. 2007
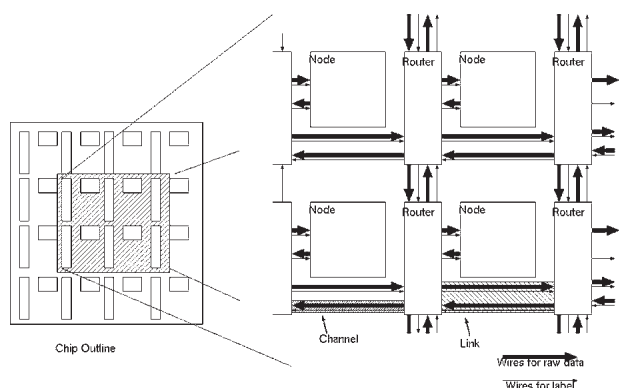
Digital Content and Media Sciences Research Division

The Division conducts research on various types of contents and media such as text and video in terms of analysis, creation, compilation and application, and their processing methods from the theories to the systems.

Linking the Web with databases — Bibliographic database linkage system —

As information systems increase in size and diversify, there is a need for information integration technology that will restructure information in a human-friendly way. The key to information integration is linkage between descriptions that refer to the same object in the real world.

In the database field, experts have been working on detection of redundant records, that is, identifying multiple records that refer to the same object. This is used to check the consistency of data or integrate different databases. While these conventional studies aim at deduplication of database records, our study focuses on relating ordinary writings (text) to database records. For instance, we are developing a bibliographic linkage system that relates the citations of papers or other unstructured text in the Web to the records of bibliographic databases. We are also investigating a method of identifying authors using the proposed bibliographic linkage system.

We will work to create a system that restructures information by gathering descriptions of the same objects, analyzing their relationship and getting the whole picture.

(Akiko Aizawa)
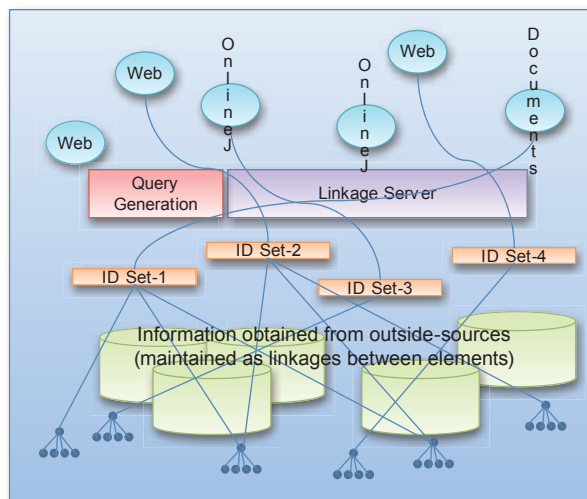
Application example of bibliographic linkage system

Media security technology for safe and secure distribution of digital media

Thanks to the state-of-the-art network functions, cyberspace infrastructure has been established and more and more digital media, e.g., text, music and movies, are distributed in cyberspace. However, it is difficult to distribute high-quality and reliable digital media, because, compared with physical space, cyberspace does not provide sufficient security in areas such as copyright protection, distribution management, and authenticity assurance. Also, for distribution, digital media may have to be converted into another file format, or to analog data and then to digital data again. Security measures have to remain effective even after such media conversion.

Our study aims at achieving safe and secure media distribution in cyberspace. We are seeking digital media security technology with security requirements matching those in physical space. Specifically, we are seeking (1) a media distribution protocol based on information hiding and cryptographic protocols, which is robust against media conversion and cryptographically safe; (2) system security that provides, in a simple configuration, copyright protection, distribution management, authenticity assurance and other security measures; and (3) fundamental technologies and system technologies that help achieve smooth digital media distribution.

(Isao Echizen)
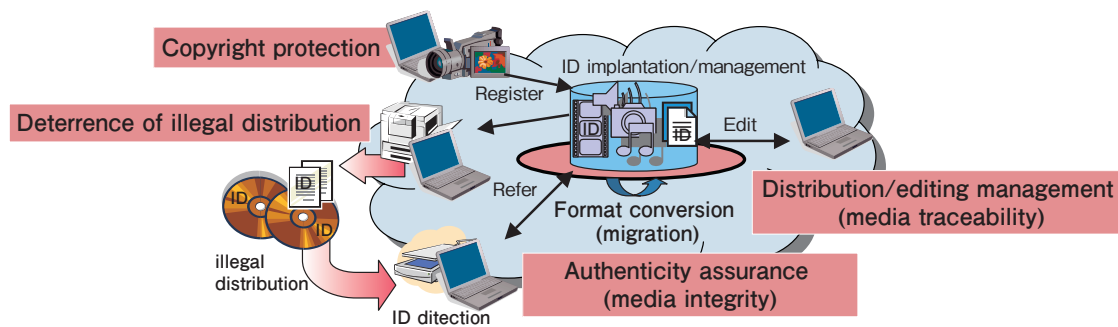
Application example of media security technology

Information and Society Research Division

The Information and Society Research Division takes an interdisciplinary approach to relations between a variety of information and society or community and to implementing information systems in society. (This approach includes social informatics, scientific informatics, and cultural informatics.)

Analysis of Japan's industry-government-academia cooperation network based on papers

Industry-government-academia cooperation is critical for knowledge-dependent innovation. The so-called Triple Helix model (involving industry, government, and academia) is currently drawing international attention as an important alternative to the conventional models of cooperation headed by industry. In this new model, universities, corporations, and government must interact and work in a balanced fashion. As centers of knowledge production, universities play a key role in this triumvirate with respect to innovation. We undertook this study to show through empirical data the extent to which the Triple Helix model has spread across Japan. To do this, we analyzed joint industry-government-academia papers and patent data, which is regarded to reflect financial, human, and intellectual cooperation between industry, government, and academia.

The study uncovered numerous interesting findings. One is the divergence between corporations and universities in degree of interest in industry-academia partnerships. While in recent years both sectors have espoused the need for industry-academia partnerships, universities in practice appear to be more important to corporations than vice versa. Our analysis of statistics on information amounts indicates that from around 1995, universities began to participate in joint research efforts with corporations at lower rates (see the chart on the right). The sheer quantity of joint sector papers or the proportion account-ed for with respect to all papers published does not necessarily represent the extent or depth of ties between industry and academia. But joint papers do provide important clues to the status of universities/corporations relationships. More detailed studies along this line should lead to many more useful findings.

(Yuan Sun)

References:
Yuan Sun, Masamitsu Negishi and Loet Leydesdorff "National and International Dimensions of the Triple Helix in Japan: University-Industry-Government and International Co-authorship Relations", the 11th International Conference of the International Society for Scientometrics and Informetrics, pp.936-937, Spain, 25-27 June 2007
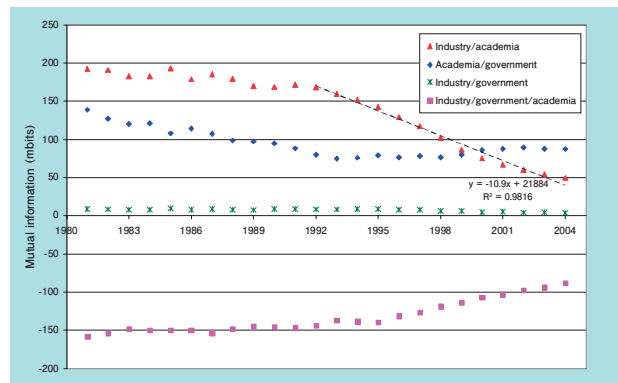
What do story tellers refer to and what do they not refer to?

To design a dialogue system and make it understand what human users say, we need to understand how humans organize their discourse. My research attempts to elucidate the mechanism underlying often puzzling human linguistic behavior. For instance, when asked to retell a cartoon story, most narrators avoid mentioning a particular piece of information in the story. My colleagues and I found that narrators avoid mentioning it probably because by referring to it they would collapse the catchment, which is the recurrence of one or more gesture features in discourse and it is useful for reference maintenance because recurrent features suggest a common theme to the discourse. The avoided information in question is the direction in which the cat, the protagonist, escapes from the old woman in the punch line of the fifth scene. Up to that point, all of the scenes end with the cat being thrown out from the left to the right of the cartoon frame (the vertical dimension is ignored here). In the fifth scene, the cat escapes from the right to the left, deviating from the consistent pattern that had been established. The irregular pattern might possibly be considered and marked as new information, but the information is actually often dropped from the narrative. We can explain this phenomenon in terms of catchment, which in many narrations of this particular story materializes as the default positions of the cartoon characters, directions of movement, etc. If the narrator collapses the catchment by mentioning the deviant spatial pattern to be precise, he or she would not be able to use the catchment for reference maintenance again. Thus, for many story tellers, the priority is on easy reference maintenance by keeping the catchment intact. This also explains why many narrators mention the deviant spatial pattern in the final scene, because they no longer have to maintain a reference after talking about the final scene. The phenomenon suggests that the catchment not only serves to achieve cohesiveness in discourse (e.g., reference maintenance), but also may constrain the selection of information to talk about.

(Nobuhiro Furuyama)

N. Furuyama & K. Sekine, 2007, Forgetful or Strategic? The Mystery of the Systematic Avoidance of Reference in the Cartoon Story Narrative. In Gesture and the Dynamic Dimension of Language: Essays in honor of David McNeill, S. Duncan, J. Cassell, and E. Levy (Eds.). John Benjamins Publishing Company, 75-81.
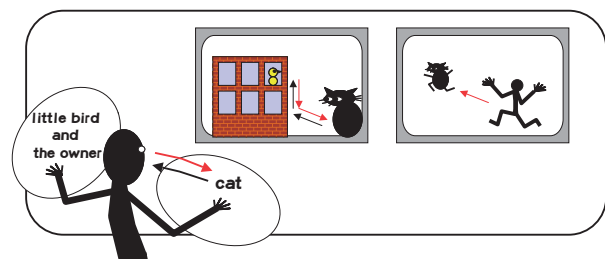

Figure: An image showing how the narrator gesturally expresses the layout and movements of cartoon characters.

Research Center

Center for Grid Research and Development

The Center researches and develops grid middleware necessary to advanced research and development in the Cyber Science Infrastructure (CSI), and disseminates its results and conducts operations.

Research and Development Center for Informatics of Association

The Center researches and develops associative calculation mechanisms about large-scale content, and constructs practical information technology that supports raising humans' associative ability.

GRACE Center: Center for Global Research in Advanced Software Science and Engineering

This Center produces top-level researchers (Top RE) and educates top-level software engineers (Top SE) by building global research organizations and promoting research, practice, and education together for advanced software engineering.

Research Center for Community Knowledge

The objective of this research center is to study how "common knowledge" is formed and developed in the cyber space. More precisely, we research and develop the next generation's knowledge & information sharing infrastructure, which is named "NetCommons".

Strategic Research Projects Incubation Center

The Center plays a role in developing potential projects and incubating them into strategic and organized projects by providing research support.

Research and Development Center for Academic Networks

The Research and Development Center for Academic Networks is responsible for conducting research and development as well as construction of the cutting-edge infrastructures of the academic network and the UPKI (InterUniversity Public Key Infrastructure) for Japanese universities, both forming the core of the Cyber Science Infrastructure (CSI) by cooperating with Japanese universities and relevant organizations.

Research and Development Center for Scientific Information Resources

The Center coordinates and operates with the related organizations in conducting advanced research and development about their circulation and generation, common of the academic digital content on the Cyber Science Infrastructure (CSI).

Organization for Management and Outside Collaboration on R&D

Organization for Science Network Operations and Coordination

The Organization coordinates and operates the construction of Science Information Network, middleware and others as part of the core of Cyber Science Infrastructure (CSI).

Organization for Scientific Resources Operations and Coordination

The Organization coordinates and operates the management of scientific resources and the provision of services as part of the core of the Cyber Science Infrastructure (CSI).

Organization for Value Creation in Informatics

Meeting future social and technological requirements through value creation in informatics, the organization is making continuous research efforts are made to overcome grand challenges by organizing all Japanese universities and research institutions in each research area.

Organization for Promoting Cooperation with Society and Industry

Promoting research activities in informatics to contribute to society and the public and to reinforce government-industry-academia collaboration, and aiming at sharing research results and their values with society and industry, the organization is developing innovative model and frameworks for promoting cooperative activities.

Grand Challenge

NII promotes studies on the following topics that may lead to breakthroughs in informatics.

- Breakthroughs algorithms
- Dependable software
- Content value creation
- Bridging the semantic gap affecting image media
- ICT governance: its social system and legal system

Projects

Cyber Science Infrastructure (CSI)

- Science Information Network SINET3
  Organization for Science Network Operations and Coordination
- Integrated middleware for CSI
  Center for Grid Research and Development
- Academic Content Service
  Organization for Scientific Resources Operations and Coordination
- UPKI (Inter-University PKI) joint public key infrastructure for universities
  Organization for Science Network Operations and Coordination
- E-Science Project

Informatics for future value creation

- Cyber infrastructure for the information-explosion era
  Jun Adachi
- Research into quantum computing based on coherent states and solid state quantum bits (qubits)
  Yoshihisa Yamamoto
- Science Grid
  Kenichi Miura
- Next-generation Informatics Research Infrastructure

Next-generation software strategies

- Next-generation operating system: SSS-PC
  Takashi Matsumoto
- Identifying basic software technologies
  Katsumi Maruyama
- Top SE (Education Program for Top Software Engineers)
  Shinichi Honiden

Information environment/content creation

- The Bio-portal-in-Japanese Project
  Asao Fujiyama
- Associative information access technology incorporating self-learning
  Akihiko Takano
- Generic Engine for Transposable Association (GETA)
  Akihiko Takano
- Content integration and manipulation technology for digital archiving
  Jun Adachi
- Thinking content - The Smartive Project
  Shinichi Honiden
- Research Infrastructure for Evaluation of Information Retrieval and Access Technologies – NTCIR
  Noriko Kando

Social/public contribution

- Cultural Heritage Online
  Akihiko Takano
- IMAGINE – a content-based infrastructure associated to the imagination
  Akihiko Takano
- Information sharing system – NetCommons
  Noriko Arai
- Digital Silk Roads Project
  Kinji Ono
- Information reliability mechanism - Infotrustics
  Noboru Sonehara

Integrated informatics

- Determing the genomic infrastructure of evolution and diversity through comparative genome analysis
  Asao Fujiyama

Projects

Cyber infrastructure for the information-explosion era

Jun Adachi

http://research.nii.ac.jp/i-explosion/eng/

The aim of this project is to develop core technologies for advanced IT infrastructure designed for the "information-explosion era." These core technologies are in areas such as the efficient, secure, and unbiased extraction of necessary information from exponentially expanding mounds of data; safe, secure, and sustainable system administration for massive information systems; and utilizing information through user-friendly dialog. The project also incorporates design of social systems to accommodate advanced IT services in wider society, through R&D into a range of advanced techniques in informatics and related fields and flexible combinations thereof.

[Ministry of Education, Culture, Sports, Science and Technology (MEXT): Grant-in-aid for Scientific Research on Priority Area: Professor Kitsuregawa, University of Tokyo)]

Top SE (Education Program for Top Software Engineers)

Shinichi Honiden

http://www.topse.jp/

The Top SE Project is developing a structured software engineering course curriculum based on advanced, practical software development teaching materials put together by software engineering researchers from universities and research institutes in Japan and around the world and augmented by input from industry. The objective is to rectify the tendency of software engineering education and research courses at Japanese universities to pursue "toy problems" — that is, issues that are removed from reality and have little practical relevance. The software targeted in this project is mainly related to networked home appliances. The classes thus developed will be used as the basis for training and educational units equivalent to master's courses at university graduate schools, as part of a structured education program in advanced software engineering. The aim is to train "super-architect" professionals with the capability and adaptability to take on new problems and technological issues.

[Ministry of Education, Culture, Sports, Science and Technology (MEXT): FY2004 Promotion and Adjustment Expenses, for the issue of "Creating Training Facilities for Advanced Software Engineers Integrating Industry and Academia"]

The Bio-portal-in-Japanese Project

Asao Fujiyama

http://www.bioportal.jp/

This project involves research and development of a portal site to the current knowledge and proceedings of life science and related technologies. The aim of this project is to encourage students and researchers as well as ordinary tax-payers to obtain/provide descriptions and explanations in plain Japanese. The contents cover from basic scientific literacy in life science to the information on research-oriented databases together with interconnected viewer on genes and genomes. The background technology of this project contains construction of multi-lingual dictionary, thesauri, domain-specific ontology, data retrieval system, and above all, thorough inspection of the contents by specialists and scientists, who are trying to improve them as much as possible, is the vital part of this unique project.

Associative information access technology incorporating self-learning

Akihiko Takano
http://www.cc-society.org/about/about_cts02.html#ctslink05
This project aims to develop associative information access technology that imparts depth and security to the information space, in order to provide an overall structure for associative informatics. By creating a flexible combination of multiple information sources (where such sources are originally designed for differing purposes) in accordance with user-specified parameters, the technology stimulates new ideas and concepts. Similarly, associative computing of experiential information such as images, video, and three-dimensional objects in tandem with text data supports scholarly learning predicated on experience and experimentation.
[Ministry of Education, Culture, Sports, Science and Technology (MEXT): Technology Infrastructure for Intellectual Assets Project for the issue of "Associative Information Access Technology Incorporating Self-Learning"]
http://www.cc-society.org/about/about02.html

Thinking content – The Smartive Project –

Shinichi Honiden
http://smartive.jp/
Smartive technology generates content autonomously based on the needs of content providers and users, which are embedded in the form of policy. Prototype trials and validation tests on an application of Smartive technology involving the generation of teaching content for English conversation practice among students have shown the technology to be an effective new e-Learning system. It is hoped that Smartive technology will also revolutionize content utilization in fields other than education, such as music, video, and advertising.
[Ministry of Internal Affairs and Communication (MIC): FY2002 Strategic Telecommunications Research and Development Promotion System, Joint Initiatives between the Private, Public and Academic Sectors, Advanced Technology Development (SCOPE), for the issue of "R&D into Agent Framework for Secure and Accessible Content Distribution"]

Research Infrastructure for Evaluation of Information Retrieval and Access Technologies – NTCIR

Noriko Kando
http://research.nii.ac.jp/ntcir/
In order to leverage the research in information access technologies like information retrieval, question answering, summarization and text mining, NTCIR has constructed and provided research infrastructure for evaluation of information access technologies which consists of the large-scale test collections (data sets re-usable for experiments), evaluation methodologies, and a forum of researchers through the series of NTCIR workshop, in which more than 100 participating research groups have enjoyed their research and cross-system comparison on the common infrastructure and exchanging research idea in informal atmosphere. NTCIR has placed emphasis on East Asian languages but attracted international participation from all over the world. The test collections are available for research purpose.

Projects

Cultural Heritage Online

Akihiko Takano

http://bunka.nii.ac.jp/

Cultural Heritage Online is a portal that gathers together in one place on the Internet information on a diverse range of significant Japanese cultural artifacts for communication to a wide range of users. Centered on information on artifacts such as works of art and crafts provided by institutions including history and art museums from across Japan, the site provides access to 60,000 articles on both tangible and intangible cultural inheritances and 7,000 photographs of such artifacts. The National Institute of Informatics is in charge of the development and operation of this service, and has utilized new types of information technology such as the ability to search for similar cultural artifacts using associative retrieval and related documents.

[The Agency for Cultural Affairs]

Information sharing systems – NetCommons

Noriko Arai

http://www.netcommons.org/

NetCommons is an information-sharing platform for e-Learning sites and virtual labs, designed to encourage the formation of virtual communities among universities and NPOs. The NetCommons 100 Project, a two-year validation trial launched in July 2003, evaluated the introduction, utilization, efficacy, and convenience of the platform. The trial involved some 90 groups including universities, other higher education institutions, and joint industry-university groupware initiatives, as well as virtual offices such as NPOs. Following the success of the trial, version 1.0.0 of the platform was released as open source code in August 2005 in a bid to promote the NetCommons approach throughout society.
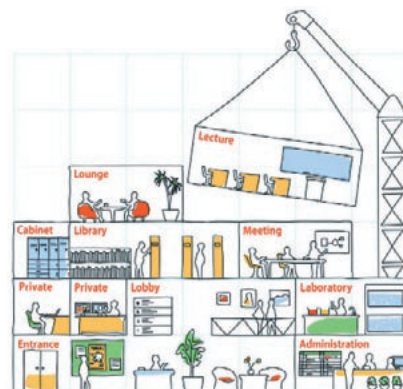
Information reliability mechanism – Infotrustics

Noboru Sonehara

The advent of the ubiquitous society will lead to an explosive increase in the volume of information disseminated over networks. Users will need to be much more selective in plucking out the required information from the massive volume in circulation. The selection process depends on frameworks for evaluating information with respect to accuracy, reputation, ranking, and quality — frameworks that have yet to be developed. The aim of this project is to develop an information reliability evaluation system for implementation in wider society as a combination of (1) techniques for objective evaluation of rating and quality information; (2) subjective evaluation mechanisms for reputation and word of mouth information; and (3) analysis of how the reliability of information affects economic models with respect to informatics, engineering, law, and economics.
[Ministry of Education, Culture, Sports, Science and Technology (MEXT): Social Science R&D Project, for the issue of "Governance in the Ubiquitous Society"]

Determining the genomic infrastructure of evolution and diversity through comparative genome analysis

Asao Fujiyama
http://www.genome-sci.jp/

The Comparative Genome Project, a designated research field of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), seeks to describe biological evolution and diversity on earth through analysis of biological genomes that hold the vital key to the evolution of life over more than 3.5 billion years. The project studies the most important biological genomes in relation to evolution, namely animals such as choanoflagellates, silkworms, amphioxuses, cyprinodonts, chimpanzees, and humans, as well as plants such as moss and corn. The project is also involved with new approaches to genome research such as analysis of co-existence systems generated by plants and bacteria in the environment. Within the scope of objectives in this very wide field, the focus of research is on primate genomes and the factors that led to the evolution of primates into humans.

Current Research Topics of Reseach Staff of NII

Principles of Informatics Research Division

■Mathematical Informatics

Ken Hayami	●Numerical Analysis, Numerical Linear Algebra ●Development and analysis of iterative methods for large systems of linear equations, least squares problems.
Kenichi Kawarabayashi	●Graph coloring problems in discrete math ●Structural graph theory and its applications to algorithms ●Network flow and disjoint paths problem
Takeaki Uno	●Efficient and practical fast algorithms for solving large scale problems arising from data mining and genome sciences ●Theory of Complexity on Discrete algorithms and enumeration algorithms ●Practical efficient computational models and algorithms for industrial engineering such as scheduling, logistics, and vehicle routing problems

■Mathematical Logic

Makoto Kanazawa	●Lambda calculus and formal grammar ●Logical semantics of natural language
Makoto Tatsuta	●Type theory for classical logic ●Strong normalization of permutative conversions

■Quantum Information

Keiji Matsumoto	●Quantum information and computation
Kae Nemoto	●Quantum information/computation ●Quantum optics ●Theoretical physics
Shoko Utsunomiya	●Quantum simulation using optical semiconductors ●Quantum solid state physics in optical semiconductors
Yodai Watanabe	●Security of quantum key distribution schemes ●Relation among security notions in cryptography ●Performance of probabilistic inference algorithms on graphical models
Yoshihisa Yamamoto	●Photonic quantum information systems ●Electronic quantum simulation systems

■Chemical – and Bio – Informatics

Asao Fujiyama	●Comparative genomics research
Keiichi Kuma	●Comparative genome analysis based on molecular evolutionary approach
Hiroko Satoh	●Chemoinformatics ●Computer chemistry ●Molecular modelling

■Intelligent Informatics

Nigel Henry Collier	●Text Mining ●Natural Language Processing ●Ontology Engineering
Ryutaro Ichise	●Machine learning ●Knowledge sharing ●Data mining
Tetsunari Inamura	●Human robot interaction ●Synthetic study of robot intelligence based on stochastic information processing ●Intelligent information processing based on embodiment of robots
Katsumi Inoue	●Inference and Knowledge Representation ●Hypothesis-finding based on Induction and Abduction ●Knowledge Discovery for Systems Biology
Ken Satoh	●Construction of multiagent systems with speculative computation ●Applications of AI to Legal Reasoning
Hideaki Takeda	●Knowledge sharing system ●Community support system ●Design theory

Information Systems Architecture Research Division

■Network Architecture

Shunji Abe	●Researches on performance analysis based on communication traffic measurement and QoS control method ●Researches on photonic network architecture ●Researches on mobile IP communication
Shoichiro Asano	●Integrated control technologies for next-generation all-optical networks ●Survival of network operation against natural calamities
Kensuke Fukuda	●Measurement and analysis of Internet traffic ●Network science

■Information Network

Yusheng Ji	●Research on quality of service provisioning in multi-service networks ●Research on characterization and control of network traffic ●Research on resource management in distributed systems
Motonori Nakamura	●Network Communication Systems ●Security/Authentication Technologies ●Network Operations and Administrations
Shigeo Urushidani	●Dynamic resource optimization technologies for multi-layer networks ●Universal switching system architecture
Shigeki Yamada	●Research on ubiquitous and mobile networks and their applications ●Research on Delay/Disruption-Tolerant Networks (DTNs)

■Computer Architecture

Kento Aida	●Parallel computing　●Grid computing　●Scheduling
Hiromichi Hashizume	●Human interface with computer augmented reality　●Collaboration support systems
Michihiro Koibuchi	●Computer system networks　●On-chip multiprocessor networks ●Large-scale high-performance computing systems
Takashi Matsumoto	●Research on fault-tolerant functions for the SSS-PC operating system ●Research on high-performance embedded microprocessors which can efficiently cooperate with high-speed network
Kenichi Miura	●Grid Computing　●Supercomputer Architecture and Performance Analysis ●Parallel Numerical Algorithms for Large Scale Simulations, Monte Carlo Method, Nonlinear Dynamics

■Software infrastructure

Soichiro Hidaka	●Optimization of XML query language　●Parallel processing environments for non-numeric applications ●Extensible and distributed operating systems
Zhenjiang Hu	●Principle of Programming: Functional Programming, Programming Algebras ●Software Engineering: Dependable Software Construction, Bidirectional Model Transformation ●Parallel Programming: Skeletal Parallel Programming, Automatic Parallelization
Katsumi Maruyama	●Research on an extensible distributed operating system　●Research on a wide-area cooperative system ●Communication software
Ichiro Satoh	●Middleware for ubiquitous, mobile and distributed computing　●Distributed object and mobile agent

■Software Engineering

Shinichi Honiden	●Autonomous Agents and Multiagent Systems　●Ubiquitos Computing　●Software Engineering
Hiroshi Hosobe	●Theory and solution of soft constraints　●Constraint programming for graphical interfaces ●Hybrid concurrent constraint programming
Shin Nakajima	●Formal Methods for Use in Industry, Software Model-Checking
Tomohiro Yoneda	●Formal verification of real-time software ●Dependable VLSI system implementation based on asynchronous circuit technology
Nobukazu Yoshioka	●Agent oriented software engineering　●Agent Architecture　●Security Software Engineering

Digital Content and Media Sciences Research Division

■Foundations of Content Management

Isao Echizen	●Technologies and systems for multimedia content security　●Integrity of multimedia content ●Information hiding
Fuyuki Ishikawa	●Software Infrastructure for Contract-based Composition, Distribution, Provision, and Consumption of Digital Content and Services　●Service-Oriented Computing　●Formal Methods
Norio Katayama	●Data Management Technology for Video Corpus Analysis
Hiroyuki Kato	●Optimization for casual queries to database　●Fundamental issues on optimizing queries to XML databases
Shingo Nishioka	●Research on Scalable Association for Huge Corpus Access ●Interactive methods in information space based on association
Akihiko Takano	●Informatics of Association　●Algebra of Programming
Atsuhiro Takasu	●Data mining and text mining　●Information extraction from document stream ●Distributed index processing
Kazutsuna Yamaji	●Research data sharing and its metadata management ●Platform system activating the research community

■Text and Language Media

Jun Adachi	●Information retrieval and integration of heterogeneous data ●Modeling and implementation of high-performance information retrieval systems　●Text mining
Akiko Aizawa	●Identification and linkage of text information　●Analysis of textual data using statistical methods ●Automatic construction of linguistic resources
Keizo Oyama	●Research on techniques for utilizing web information ●Research on an integrated platform for scholarly information services ●Research on full text search technology

■Pattern Media

Asanobu Kitamoto	●Data mining from large-scale scientific image databases　●Meteoinformatics　●Digital archives
Kazuya Kodama	●A study on structure of multi-dimensional image information and communication systems of distributed shared image environment with real-time quality control
Hiroshi Mo	●A study on case based video indexing　●A study on intelligent video structuring
Imari Sato	●Physics-based object shape and reflectance modeling ●Creating spatially immersive displays for human computer interaction
Shin'ichi Satoh	●A Study on video analysis, retrieval, and knowledge discovery based on broadcast video archives ●A study on image retrieval
Akihiro Sugimoto	●Sensing and understanding human activities in our daily life　●Automatic modeling of 3D objects ●Computer vision under the existence of digitization errors

Current Research Topics of Reseach Staff of NII

■Human and Knowledge Media

Kenro Aihara	● Computer supported lifelong learning by using digital archives about historical and artistic objects ● Integration of user's context in real- and virtual World
Frederic Andres	● Multilingual multimedia semantic management ● Geomedia Database Management ● Image learning ontology ● Semantic tracking computing
Masashi Inoue	● Utilization of multiple information sources ● Multimodal communication understanding
Ikki Ohmukai	● Personal communication and interaction in semantic Web environment ● Information sharing and distribution based on personal network
Helmut Prendinger	● Life-like characters ● Automatic content creation for virtual worlds and the 3D web ● Multimodal interface
Seiji Yamada	● Human-Agent Interaction ● Interactive Information Gathering/Retrieval

▌Information and Society Research Division

■Information Use

Noriko Arai	● Designing collaborative learning environment ● Knowledge sharing, distance learning ● Mathematical logic
Nobuhiro Furuyama	● Motor coordination in communication
Hironobu Gotoda	● Similarity search for 3D models ● Visualizing citation links among research papers
Noriko Kando	● Evaluation of information access technologies ● Text structure and genre analysis ● Multi-faceted metadata and search user interface ● Cross-lingual information retrieval
Teruo Koyama	● Term extraction from text corpora ● Structurization of terms ● Structural analysis of terms ● Knowledge representation and use
Akira Miyazawa	● Union catalogue database construction and usage ● Metadata representation and construction ● Character codes as a fundamental tool for data representation ● D: Data processing utilitiesndexing
Kouichirou Ueki	● Development of the next generation information system

■Science Information

Sumio Kakinuma	● Science and Technology Policy Studies ● Scientometrics ● Sociology of Science
Masamitsu Negishi	● Research on trends in technology and businesses for databases, electronic libraries and e-journals with the current developments of information and telecommunication technologies ● Bibliometric research for measuring research levels and identifying research trends
Masaki Nishizawa	● Investigation study on network structure of information sciences related research and its trends ● Empirical analyses on the role of Grants-in-Aid for Scientific Research for promotion of basic research ● Empirical analyses on network for industrial-government-university cooperation in Japan
Morio Shibayama	● Metrical analysis of research trends and research evaluation ● Statistical study on change of research environment ● Study on indentification of creativity in research activities
Yuan Sun	● Bibliometric research on university-industry-government relations ● Structure analysis on network of informatics related research ● DIF research in Japanese achievement testing

■Information Public Policy

Tetsuro Kobayashi	● Social and political consequences of ICT use ● Social network and human communication ● Social capital theory
Takashi Koga	● Legal, institutional and policy research concerning access to government information ● Interdisciplinary research on recordkeeping and archival issues
Hitoshi Okada	● Research on Critical Growth Factors of E-Commerce and E-Money ● Research on University Information Security Policy Portal (UISPP)
Noboru Sonehara	● Digital commerce (dCommerce) system ● Intellectual property rights lifecycle management system
Yoh'ichi Tohkura	● Relationships between ICT (Information and Communication Technology) and humans ● Science and technology for the society ● Transdisciplinary study on human information processing
Masashi Ueda	● Network policy for broadband society ● Social and economic analysis of open source software

Graduate Education Activities

NII provides graduate education under the three main forms described below, in its efforts to train leading researchers capable of combining a broad view with advanced specialization. Students develop the ability to address challenges by capitalizing on NII's unique strengths, including comprehensive informatics research systems and a practical environment in which theoretical research and practical development are combined.

⑴ Participation in the Graduate University for Advanced Studies
⑵ Cooperation with graduate universities
⑶ Special collaboration with research students

Department of Informatics, The Graduate University for Advanced Studies

■Establishment of the Departmen

The Department of Informatics (advanced PhD program), which began at the Graduate University for Advanced Studies with the participation of the NII in April 2002, saw its first class of students graduate in March 2005.
And Sokendai introduced A five-year doctor course program from 2006. (Admission Quota - A five-year doctor-course program: 4 / A three-year doctor course program: 6) Sokendai is a graduate university composed of 21 majors in six subjects, five of which (corresponding to 20 majors) are shared among inter-university research institutes.

■Aims and Structure of the Department

The Department's goal is to foster outstanding young international IT researchers and technicians. Students work toward obtaining a Ph.D.
The Department covers the following six research areas, and offers a total of over 80 subjects.
· Fundamental Informatics
· Foundations and Infrastructure Science
· Software Science
· Information and Media Sciences
· Intelligent Systems Science
· Information Environment Science

■Description

Since its start, the Department of Informatics has pro-actively accepted students from overseas. For this reason, the department features lively cultural exchanges among its diverse student body.
The Department also features a large number of students with full-time jobs, with such students accounting for about half of the department's total enrollment.

Lecture on informatics in the class room
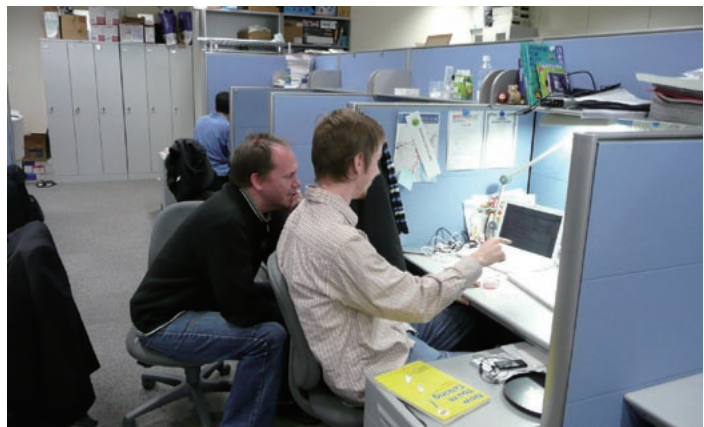
Graduate students office

■Enrollment (as of April 2008)   ( ) Foreign students among total

Year of Admission		A five-year doctor course program	A three-year doctor course program	Total
FY 2002	April	——	1	2 (0)
	October	——	1 (0)	
FY 2003	April	——	2 (0)	3 (0)
	October	——	1 (0)	
FY 2004	April	——	1 (0)	9 (1)
	October	——	8 (1)	
FY 2005	April	——	4 (0)	11 (2)
	October	——	7 (2)	
FY 2006	April	1 (1)	8 (2)	19 (9)
	October	0 (0)	10 (6)	
FY 2007	April	1 (0)	8 (3)	17 (7)
	October	4 (2)	4 (2)	
FY 2008	April	4 (0)	6 (1)	10 (1)
Total		10 (3)	61 (17)	71 (20)

■Background of the students on the Sokendai Ph.D. Course

Japan	・Tohoku University　・University of Tsukuba ・Chiba University　・The University of Tokyo ・Tokyo Gakugei University ・Tokyo University of Agriculture and Technology ・Tokyo Institute of Technology ・University of Electro-Communications ・Nagoya University　・Mie University　・Kyoto University ・Osaka University　・Kobe University ・The University of Tokushima　・Kyushu University ・Kumamoto University　・Iwate Prefectural University ・The University of Aizu　・Kanazawa Institute of Technology ・Keio University　・Tokai University ・Tokyo University of Science　・Nihon University ・Hosei University　・Waseda University ・Doshisha University　・The University of the Air ・National Defense Academy of Japan
China	・Fudan University　・Nankai University ・Shanghai Jiao Tong University　・Tongji University ・University of Science and Technology of China

Thailand	・Kasetsart University
Bangladesh	・East West University　・University of Dhaka
Viet Nam	・Hanoi University of Technology
USA	・The State University of New York ・University of Pittsburgh
UK	・Imperial College London　・University of Bristol
Sweden	・Royal Insttute of Technology
Germany	・University of Paderborn
France	・Pierre and Marie Curie University ・Institut National des Telecommunications
Australia	・The Australian National University ・The University of New South Wales ・The University of Western Australia
Other	・Asian Institute of Technology

■Career options　　　　　　　　　　　　　　　　　　　　　　( ) Foreign students among total

Year of Graduation	University/Institution	Company	Not yet determined	Total
FY 2004	4	1 (1)	0	5　(1)
FY 2005	6　(5)	3 (2)	1 (1)	10　(8)
FY 2006	11　(6)	2	2 (2)	15　(8)
FY 2007	4　(2)	4 (1)	0	8　(3)
Total	25 (13)	10 (4)	3 (3)	38 (20)

Cooperation with Graduate Universities

NII actively cooperates with the graduate university of Tokyo and Tokyo Institute of Technology. NII also accepts graduate students from these institutions for additional instruction.

University	Graduate School	
The University of Tokyo	Graduate School of Information Science and Technology	FY2001～
Tokyo Institute of Technology	Graduate School of Information Science and Engineering	FY2002～
	Interdisciplinary Graduate School of Science and Engineering	FY2003～
Waseda University	Graduate School of Science & Engineering	FY2005～

Special Collaboration with Research Students

NII accepts students from other universities as research students in special collaborative projects, fostering both research and education.
And for exchanging the student of NII and the MOU conclusion system, NII accepts the foreign student as "an international internship PROGRAM" from 2005.
These students not only benefit from our extensive research databases and our infrastructure for information exchange, but also perform research under the instruction of NII research staff.

■Universities which research students for special collaboration belong to
(as of April 2008)

University / Graduate School	
Chiba University	Graduate School of Advanced Integration Science
The University of Tokyo	Graduate School of Frontier Sciences
Tokyo Institute of Technology	Interdisciplinary Graduate School of Science and Engineering
Tokyo University of Science	Faculty of Engineering
Doshisya University	Science and Engineering Research Institute

The number of students from other universities for special collaboration or cooperation between graduate universities is shown in the table on the right.

■Students from other universities (as of April 2008)

Master Course	Ph.D. Course	Research Students	Total
24	14	2	40

■Accepting students from abroad through an international internship program

FY2007	9 countries	48

■Non-MOU Grant

FY2007	4 countries	4

Contact: Research and Education Promotion Division, International Affairs and Education Support Team
TEL +81-3-4212-2110　FAX +81-3-4212-2120　E-mail : daigakuin@nii.ac.jp

Consolidation of Cyber Science Infrastructure (CSI)

http://csi.jp/

NII is promoting the consolidation of the Cyber Science Infrastructure (CSI) through cooperation with universities and other organizations.

CSI means an information environment that incorporates and utilizes various research activities and results from universities and research institutions – such as supercomputers and other distinctive scientific utilities and resources, scientific software and databases, and human resources that Japan's universities and research institutions possess – over a super high-speed network, transcending the borders of organizations or scientific fields. This infrastructure will guarantee an environment that enables the promotion of cutting-edge higher education as well as research and development of technology in universities, research institutions, and industry.
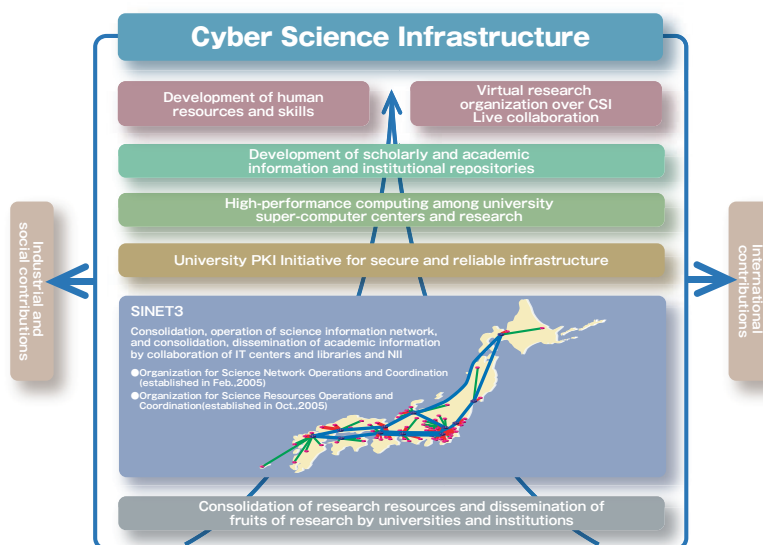
NII puts in strategic efforts to the following areas, as expanding the various development projects and operations it has implemented to date within the framework of the CSI.

1. Establishment of science information network, grid environment, and UPKI through cooperation between the NII, the university IT centers and other organizations
2. Establishment of the infrastructure for next-generation scientific resources through cooperation between the NII, university libraries, academic societies and other organizations
3. Formation of a nationwide informatics research alliance for future value creation

NII, universities and other research institutions will collaborate and cooperate closely to facilitate the above, and Japan's academic community will work as one to prepare and vigorously promote the framework for advancing CSI construction.
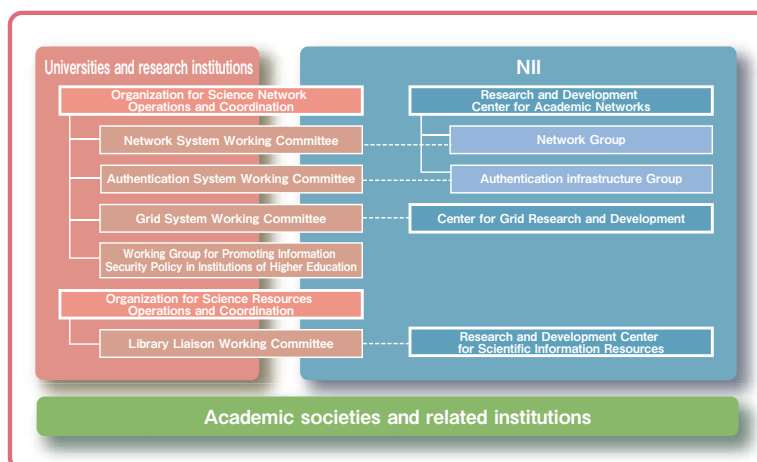
Contact: Coordination and Training Team, Infrastructure Planning Division
TEL +81-3-4212-2215   FAX +81-3-4212-2230   E-mail：plan@nii.ac.jp

Science Information Network (SINET3)

http://www.sinet.ad.jp/

The Science Information Network is an information communication network connecting universities and research institutions throughout Japan via nationwide nodes (connection points); it is designed to promote research and education as well as the circulation of scientific information among universities, research institutions, and similar entities. The Science Information Network is also connected to research networks such as Internet2[*1] in the U.S. and GÉANT[*2] in Europe to facilitate the inter-

SINET3 network architecture

To realize the diverse range of services it provides, the SINET3 network's characteristics include the following: (1) an optical/IP hybrid architecture; (2) a hierarchical architecture consisting of two layers, the backbone (core) node and research-facility (edge) nodes; (3) flexible resource assignment to each layer; (4) enhanced features for high reliability, through use of a multi-loop backbone; and (5) a large-capacity backbone with maximum line capacity of 40 Gbps.

SINET3 network services

In order to promote progress in research, development, and the educational environments that make use of networks, SINET3 is diversifying the menu of services it provides. SINET3 characteristic services include the provision of: (1) multiple layer services (IP, Ethernet, lambda/dedicated line) to increase the flexibility of networking between user organizations, (2) enriched VPN (Virtual Private Network) services to achieve secure coordination over networks, (3) enhanced QoS (Quality of Service) for stable support of real-time applications and other systems sensitive to network quality, (4) Layer-1 bandwidth-on-demand services for the purposes of ultra-high-capacity and ultra-high-quality data transmission, and (5) network performance (traffic, delay, etc.) monitoring for the visualization of network status.

Scope of network service of SINET3
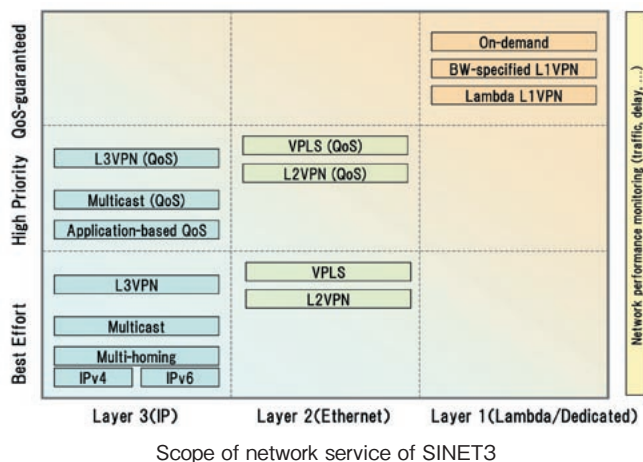
*1 Internet2   Abilene is a testbed network operated by the next-generation Internet development project "Internet2" and involves more than 190 participating universities and research institutes across the US.
*2 GÉANT   GÉANT is a pan-European research network formed by the EC as a policy initiative, and covers more than 3,000 participating research and educational organizations in more than 30 countries.

Line speed (FY2008)

- 10Gbps～40Gbps
- 1Gbps～20Gbps
- Core node (DC : Data Center)
- Edge node
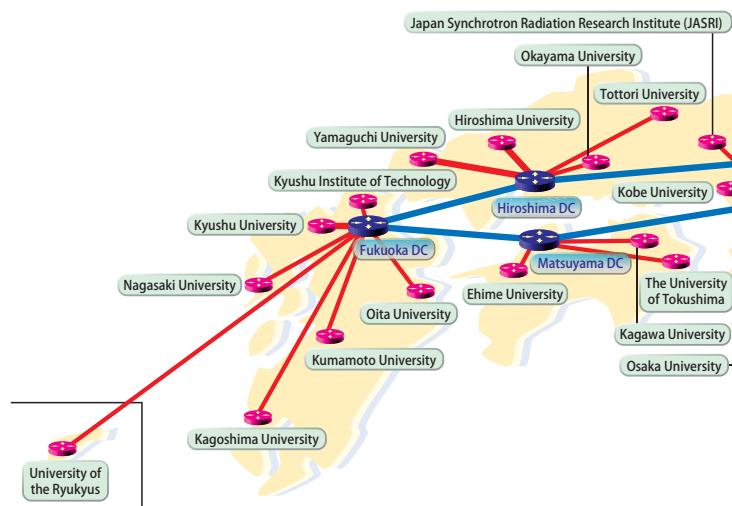
SINET Promotion Office

In October 2007, the SINET Promotion Office was established to promote use of the Science Information Network.
The services provided by the Office include consulting, user support, network service training and promotion, and educational activities for advanced use of SINET3.

Contact:
SINET Promotion Office
TEL +81-3-4212-2269   FAX +81-3-4212-2270
E-mail : support@sinet.ad.jp

national dissemination of research information and to promote collaboration with research networks overseas.

SINET3 was launched in April, 2007. It features improved reliability and more network service in comparison with its predecessor.

Participating SINET Institutions
(as of April 1, 2008)

National universities	82
Municipal universities	49
Private universities	278
Junior colleges	60
Technical colleges	42
Inter-University Institutes	14
Others	167
Total	692

To New York	: 10Gbps
To Los Angels	: 10Gbps
To Singapore	: 622Mbps
To Hong Kong	: 622Mbps

International Network Collaboration
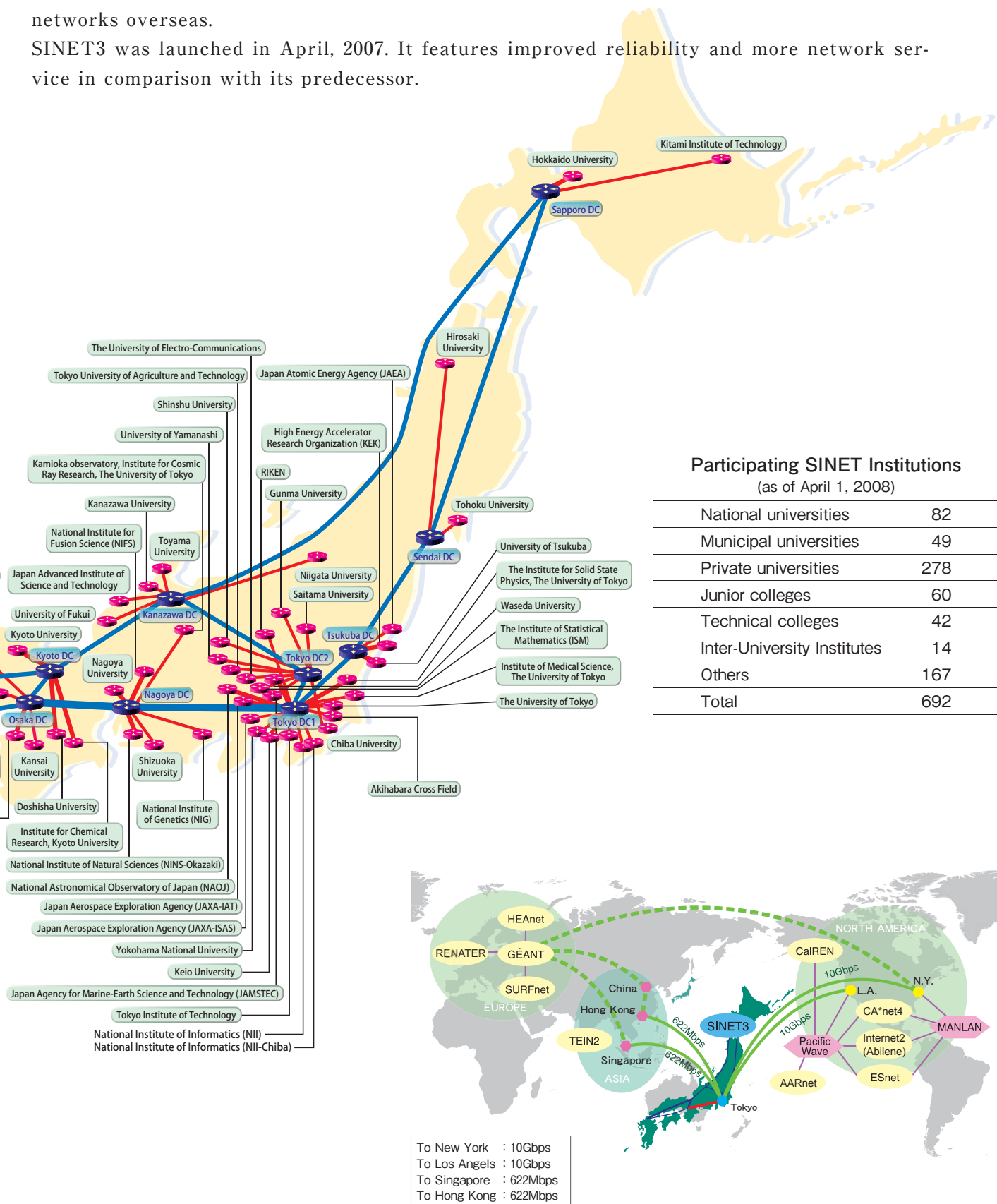
Construction of a University Public Key Infrastructure (UPKI) for use in cooperation between universities

https://upki-portal.nii.ac.jp/

UPKI overview

Construction of the University Public Key Infrastructure (UPKI) is underway, intended to achieve an inter-university cooperation that makes use of computer systems for education and research, digital content, networks, and business systems at these universities and other institutions in safe, convenient, and effective ways.

In the UPKI project, development of UPKI common specifications that makes easier to interoperate among campus certificate authorities constructed by each universities, development of inter university roaming service for Wireless LAN networks, and development of Single sign-on federation for content web services are promoted.

Since it is the last year of UPKI project, practical and beneficial applications for universities are planned to be developed to achieve a real inter-university cooperation this year.
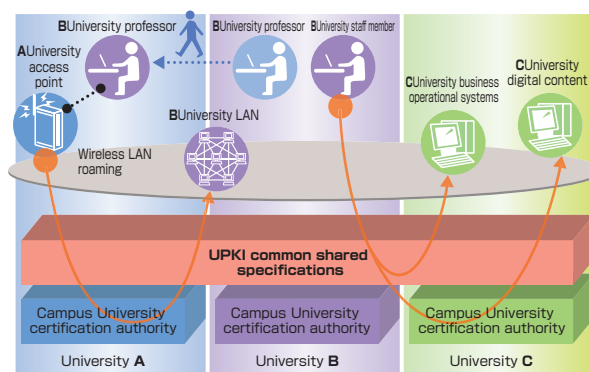
Structure of UPKI R&D and cooperation

The UPKI development project is moving forward with R&D efforts centered on the Authentication Systems Working Committee in the Organization for Science Network Operations and Coordination, established at the NII. The project publishes the draft specifications created in the Authentication Systems Working Committee to UPKI Initiative, and proceeds with the construction of UPKI with adopting the opinions and demands of Initiative participants.
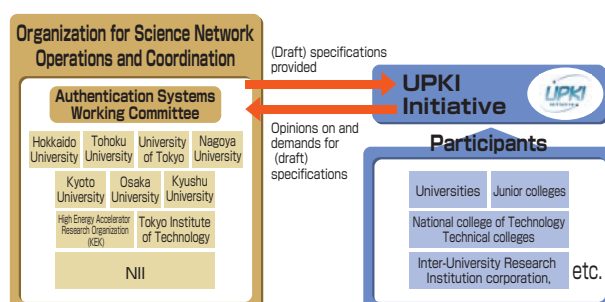
Projects now underway

● **Studying use of UPKI in content services**
- ・Single sign-on using Shibboleth
- ・Shibboleth IdP Hosting
- ・Use of time stamps in Institutional Repositories
- ・Linking handle service with time stamps
- ・Adding single sign-on features on NII content services

● **Studying use of UPKI in grid services**
- ・Interoperation of grid certification authority with UPKI certification authority
- ・Identity confirmation of grid users, using UPKI

● **Studying use of UPKI in SINET3**
- ・Use of UPKI in VPN authentication
- ・Use of UPKI in Identity confirmation of SINET personnel
- ・Use of UPKI to realize Inter-university roaming service for Wireless LAN networks

● **Studying the process of issuing server certificates**
- ・Improving security level of university's web servers by issuing/deploying the server certificates and promoting use of server certificates in continuing project "Public server certificate project".

Contact: UPKI section, Infrastructure Planning Division
TEL +81-3-4212-2218   FAX +81-3-4212-2230   E-Mail：upki@nii.ac.jp

National Research Grid Initiative (NAREGI)

http://www.naregi.org/

The Science Grid structure and Realization of Cyber Science Infrastructure (CSI)

The Science Grid enables not only to share computing resources but to build research communities (virtual organizations) and to share data and resources within and between research communities. The NII seeks to realize the CSI using the grid's research-community-formation function. It also provides support for the deployment and operation of National Research Grid Initiative (NAREGI) Grid Middleware and promotes training for grid users, as well as international research activities undertaken jointly with overseas academic institutions through international grid cooperation.
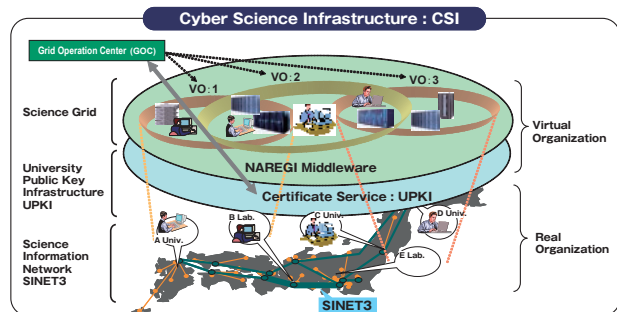
NAREGI Grid Middleware

As a part of various projects such as "The formation of ultra-high-speed computer networks" and "Development and use of advanced, high-performance general-purpose supercomputers", research and development related to the NAREGI Grid Middleware progressed over the five-year period from 2003 through 2007. In FY 2008, results of this program has been released as NAREGI Middleware Ver. 1.0.

NAREGI Grid Middleware is middleware designed to allow sharing of data and computing resources by treating multiple networked supercomputers and high-end servers as a single massive virtual computing resource.

Specifically, the middleware provides the following five functions.

1. **Resource management**
   It consists of the Grid VM, which manages computer resources connected to the grid, Distributed Information Service, which manages the information required for grid operations, and Super Scheduler, which assigns jobs to appropriate computers on the grid.

2. **Programming**
   It consists of the Grid RPC and Grid MPI used for grid programming.

3. **Grid applications**
   It consists of the Grid Workflow tool for GUI-based control of execution of jobs on the grid, Grid PSE tool for sharing applications in the grid environment, and the Grid Vis for visualizing distributed computing outputs.

4. **Data Grid**
   It consists of functions for efficient sharing of data on the grid, transmission of data from experimental equipment, and administration and querying of distributed data.

5. **Authentication**
   It consists of authentication and authorization mechanisms for users/computers distributed on the grid. It also includes software to operate the certificate authority, which issues electrical certificates on the grid.

Released on the Web as open-source software, NAREGI Grid Middleware is freely available.
Users can also choose to use only the specific functions required for their own purposes.
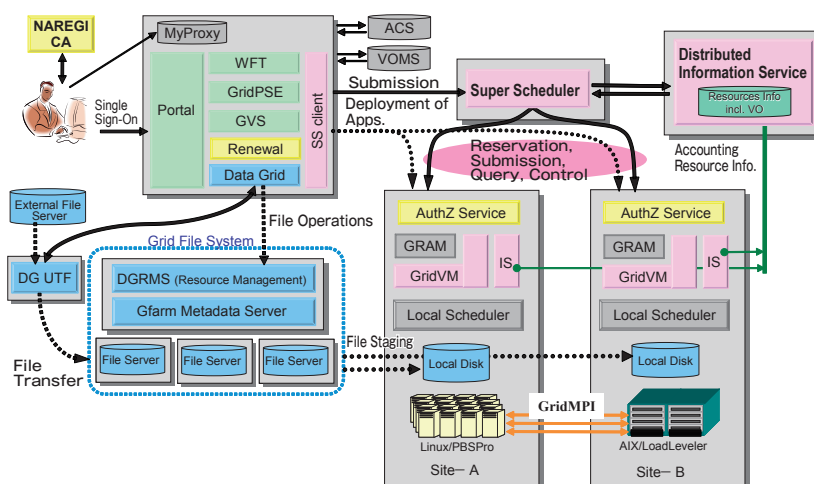
Contact: Center for Grid Research and Development
TEL +81-3-4212-2857 FAX +81-3-4212-2803   URL http://www.naregi.org/

Establishment of Next-Generation Academic Information Infrastructure

http://www.nii.ac.jp/content/

Establishment of Next-Generation Academic Information Infrastructure

Next-generation Academic Information Infrastructure is an important element of Cyber Science Infrastructure (CSI). It serves as an information platform that will secure Scholarly and Academic Information that is essential to the scholarly community while also ensuring its stable supply. At the same time, it collects and organizes the results of education and research that are produced at universities and research institutes, enhances their value, and disseminates them to society at large.

◎Next-generation Academic Information Infrastructure◎
(Creation and Dissemination of scholarly and academic information jointly by universities and NII)

Social contribution + Scholarly communities + International contribution

Make available

CSI (Cyber Science Infrastructure)
Network + materials + joint research

Scholarly material as common goods

NII

NII-REO — E-journal (Springer, OUP, etc.)
NII-ELS — Refereed and un-refereed articles from societies or bulletins
KAKEN — Reports of Grants-in-aid for scientific research
NACSIS-CAT — Catalogs

Linkage / Cooperation

Universities

Institutional repositories

Accumulation of results / Activation

Materials
Books, Journals theses and dissertations, bulletins
Research project reports
Courseware
Patents, software
Science and statistical databases
Cultural heritage

Securing

Jointly by library Consortia and NII — Scholary publishers [e-journal and e-books]
Digitalization — Academic societies [academic journals]
Crawling — Web resources in general
Harvesting — Other [press release, etc.]

NII has contributed to the formation of various forms of scholarly and academic information in cooperation with universities and academic societies. Examples of such information include catalog information of books and journals, reports on JSPS grants-in-aid for scientific research, the full text information of academic papers prepared together with societies and universities, and the e-journal archives of academic publishers (Springer, Oxford University Press, etc.) that NII purchased jointly with the University Library Consortia.

Given its role as an organization that has inherited such established undertakings and that works to promote development of next-generation academic information infrastructure, NII established the Organization for Scientific Resources Operations and Coordination in collaboration with university research institutes. With this organization playing the central role, NII will secure various forms of information needed by the scholarly community while also working toward reinforced dissemination of the valuable scientific information that is produced by universities and others.

Support for Linkage between Institutional Repositories

http://www.nii.ac.jp/irp/

Background

NII is collaborating with universities to secure various scholarly and academic information with the aim of creating next-generation academic information infrastructure. Of these information, "institutional repositories" have been attracting interest in recent years as systems for gathering, organizing, storing and transmitting academic information arising from education and research activities, particularly by universities.

Institutional repositories comprise a series of services provided by universities to members of their communities, in order to manage and transmit digital data created by universities and their members.

NII has conducted a collaborative program with universities to support the operation of institutional repositories. It involves the extension and integration of existing scholarly and academic information services at NII and the enhancement and improvement of information dissemination from universities.

Activities

Since FY 2005, NII has entrusted to universities various tasks related to promoting the development of institutional repositories.

It also entrusts surveys and R&D for developing new services through collaboration between institutional repositories and improving their user-friendliness.

In addition to those entrusting projects, it supports universities and other academic institutions for content enhancement, system linkage and community formation.

Tasks entrusted \ FY	FY2005	FY2006	FY2007
Area 1 (Development and operation of institutional repositories)	19 institutions	57 institutions	70 institutions
Area 2 （Advanced R&D ）	—	22 projects	14 projects
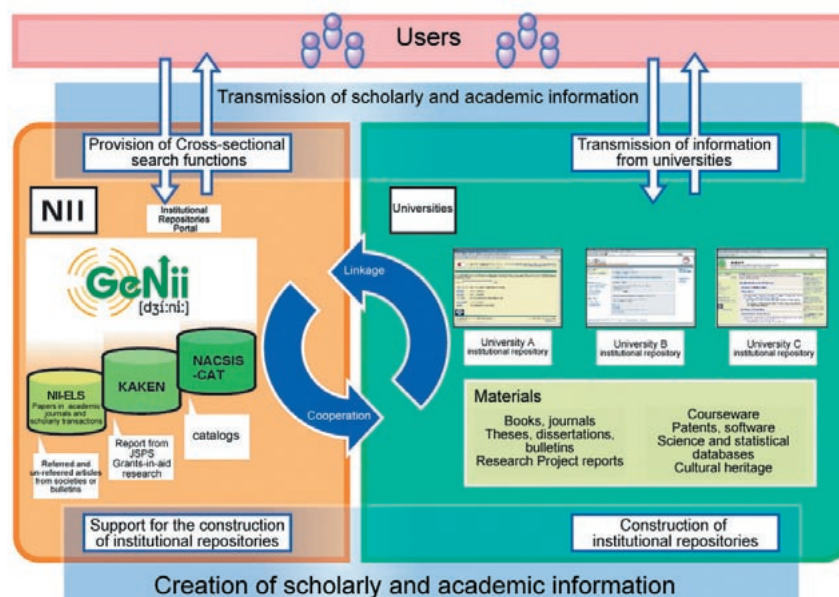
GeNii (NII Scholarly and Academic Information Portal)

http://ge.nii.ac.jp/

GeNii is a web-based service offering comprehensive scholarly and academic information created by NII in collaboration with university libraries, academic societies, and researchers.

Currently GeNii presents information in four major areas; **(1)** academic papers, **(2)** books/journals, **(3)** research results, and **(4)** specialized academic information. These areas feature individual search engines suited to the relevant content, while the GeNii Integrated Search System provides a tool for cross-referenced searching to help users quickly find the information they need.

partly charged

CiNii
- Integrated search of information on research papers
- Information on how papers are linked by citations
- Links to full text

Academic paper information

free

Search for the best books
Webcat Plus

Matching Search
Associative Search
- Associative Search Function
- Table of Contents/ Content Description
- Access to information on libraries where text is available

Book/journal information

GeNii

Information on research results

Simultaneous search of topics and results in research receiving MEXT Grants-in-Aid for Scientific Research

Adopted topics   Reports   Outlines of results

KAKEN

free

Specialized academic Information

Simultaneous search of multiple academic information databases

NII-DBR
Academic Research Database Repository

free

Scholarly and academic information on the web

CiNii (NII Scholarly and Academic Information Navigator)

http://ci.nii.ac.jp/

■CiNii provides citation information, primarily in Japanese, together with navigation tools for searching both text and citation references.

■Basic search is available to anyone via the internet, while citations and fee-based electronic library content are available to registered users only.

■The Thomson Scientific Citation Index (Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index) is also available. (There are some limitations to use of the Citation Index.)

■CiNii continually deepens its interaction with the other databases, such as the Japana Centra Revuo Medicina (Ichushi) and search engine, while expanding its own range of resources, including papers stored in NII Electronic Journal Repository (NII-REO).

■CiNii is continually looking to enhance the citation navigation experience through the introduction of additional tools such as link resolvers and CrossRef, while interacting with OPAC in university libraries.

■Database volume by content type (as of March 2008)

Content		Items	Links to full text
NII citation index database (CJP)		Bibliographies = 1.31 million Cited papers = 14.09 million	
NII electronic library service (NII-ELS)	Academic journals	Bibliographies, abstracts and papers =2.77 million	All
	University research bulletins	Bibliographies, abstracts and papers= 830,000 (with full text=320,000)	Some
Japanese Periodical Index		Bibliographies = 7.74million	

NII Electronic Library Service (NII-ELS)

■The NII Electronic Library Service is a vast digital archive encompassing recent as well as past research papers, providing access to page images of a comprehensive collection of research papers sourced from journals published by academic societies and universities research reports. Searching and browsing is available via CiNii.

■NII-ELS bibliography (as of March 2008)

Participating organizations	Journals (with full text of articles)	Research papers
1,293 (academic societies 289)	3,487	3.09 million

Contact: NII-ELS Desk, Scholarly and Academic Information Division
TEL: +81-3-4212-2340   FAX: +81-3-4212-2370   E-mail: els@nii.ac.jp

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Degitalization
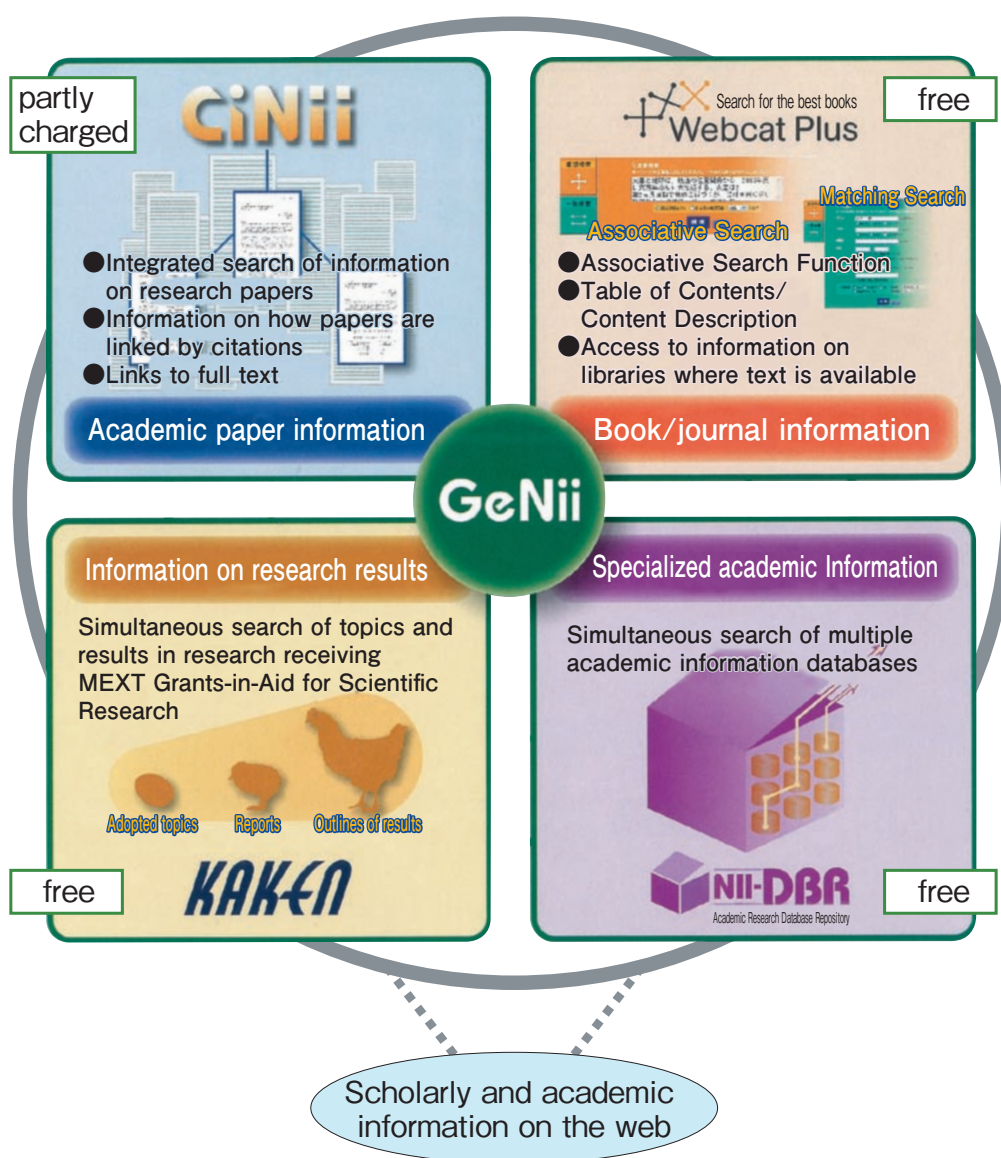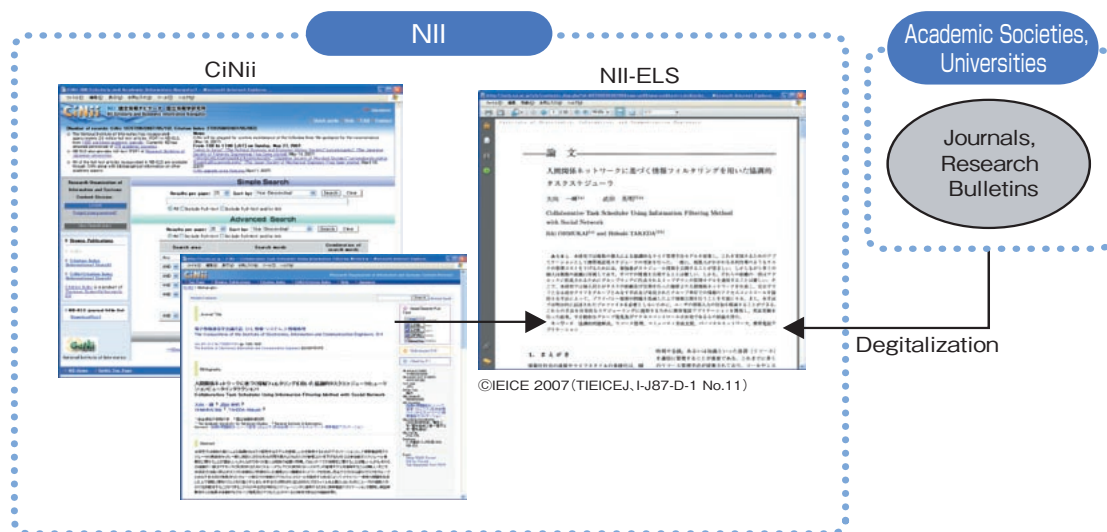
Contact: CiNii Desk, Scholarly and Academic Information Division
TEL: +81-3-4212-2300   FAX: +81-3-4212-2370   E-mail: ciniiadm@nii.ac.jp

GeNii (Scholarly and Academic Information Portal)

http://ge.nii.ac.jp/

Webcat Plus

http://webcatplus.nii.ac.jp/

■With an "Associative search function", you can easily find the books you need.

■Webcat Plus has a comprehensive books/journals catalog database from libraries and other facilities throughout the country, and tables of contents/brief summaries of Japanese and English books.

■You can search among source materials owned by university libraries and among books not stocked in libraries but commercially available.

■Database contents
(as of March 2008)

Books	Journals
13,170,000	300,000

Contact: Webcat Plus Desk, Scholarly and Academic Information Division
TEL +81-3-4212-2300   FAX +81-3-4212-2370   E-Mail：webcatplus@nii.ac.jp

KAKEN (Grants-in-Aid for Scientific Research)

http://seika.nii.ac.jp/

■This site presents a brief overview on themes (themes when initially adopted) and results (e.g., reports and reviews) of the research themes funded by grants-in-aid for scientific research from the Ministry of Education, Culture, Sports, Science and Technology and the Japan Society for the Promotion of Science.

■Provides access to the latest scientific information in Japan.

■Research lists of research areas and research themes in individual categories.

■Stored documents (as of March 2008)   570,000 items

Contact: KAKEN Desk, Scholarly and Academic Information Division
TEL +81-3-4212-2300   FAX +81-3-4212-2370   E-Mail：seika_adm@nii.ac.jp

NII-DBR (Academic Research Database Repository)

http://dbr.nii.ac.jp/

■This site features specialized databases prepared by Japanese academic societies and research groups.

■Cross-searching of two or more databases is possible, in addition to the standard individual database search.

■Stored databases (as of March 2008)   1.82 million documents
from 29 databases

Contact: NII-DBR Desk, Scholarly and Academic Information Division
TEL +81-3-4212-2300   FAX +81-3-4212-2370   E-Mail：dbr@nii.ac.jp

NII Repository of Electronic Journal and Online Publications

http://reo.nii.ac.jp/

■NII-REO is an electronic journal content storage and access system developed by consortia of university libraries as a means of ensuring continuous and reliable access to journal data. The availability of each item depends on the individual conditions agreed upon with the publishers.

■Stored databases (as of March 2008)

Publishers	Titles	Research papers	Year of registration
IEEE Computer Society	25	170,000	1988—
Oxford University Press	150	930,000	1849—2003
Kluwer Academic Publisher	500	350,000	1996—2005
Springer Science+Business Media	1,100	2,000,000	1847—1996

Contact: NII-REO Desk, Scholarly and Academic Information Division
TEL +81-3-4212-2305　FAX +81-3-4212-2370　E-Mail：reo@nii.ac.jp

Online Scientific Terms (Sciterm)

http://sciterm.nii.ac.jp/

Scientific dictionaries and glossaries help to promote consistency of usage of scientific terms among researchers and standardization of terminology across different disciplines by providing definitions and working examples of a wide range of scientific terms.
With the Online Scientific Terms (Sciterm) service, prepared with the approval of the Ministry of Education, Culture, Sports, Science and Technology and concerned academic societies (copyright holders of the series content), the scientific terms contained in the series can be retrieved, via the Internet, free of charge.

■Registered data (as of March 2008)

Number of registered Series	Number of registered scientific terms
24	145,000

Contact: Scholarly and Academic Information Division
TEL +81-3-4212-2330
FAX +81-3-4212-2370
E-mail：sciterm@nii.ac.jp

Academic Society HomeVillage

http://wwwsoc.nii.ac.jp/

Academic Society HomeVillage is a service to provide homevillage data area for Japanese academic societies. The purpose of this service is to collect scholarly research relating to Japanese academic societies and to support the activities of academic societies and scholary research through dissemination of information over the internet. The service provides a valuable information source with efficient information retrieval through keyword searching, as well as a portal site for a range of media in academic, education/research and culture fields.

■Registered data (as of March 2008)

Participating societies
1,022

Contact: Scholarly and Academic Information Division
TEL +81-3-4212-2340
FAX +81-3-4212-2370
E-mail：wwwsoc@nii.ac.jp

Catalog Information Service

The Catalog Information Service consists of the Cataloging System and the Interlibrary Loan System (ILL).

Cataloging System (NACSIS-CAT)

The NACSIS-CAT Cataloging System offers union catalog databases of academic documents (books and serials) held by university libraries and other such institutions throughout the country. These databases were compiled to support scholarly research and can be searched to determine instantly where specific materials are housed. To improve efficiency, standardized cataloging data (MARC) are referred to when constructing databases, and university li-

braries and other institutions share the work of inputting records online. The System also includes a function for referencing similar databases in other countries (OCLC in the USA, HBZ in Germany).
The union catalog of books and serials consisting of the compiled databases can be freely accessed via the world-wide web online search service (Webcat/Webcat Plus).
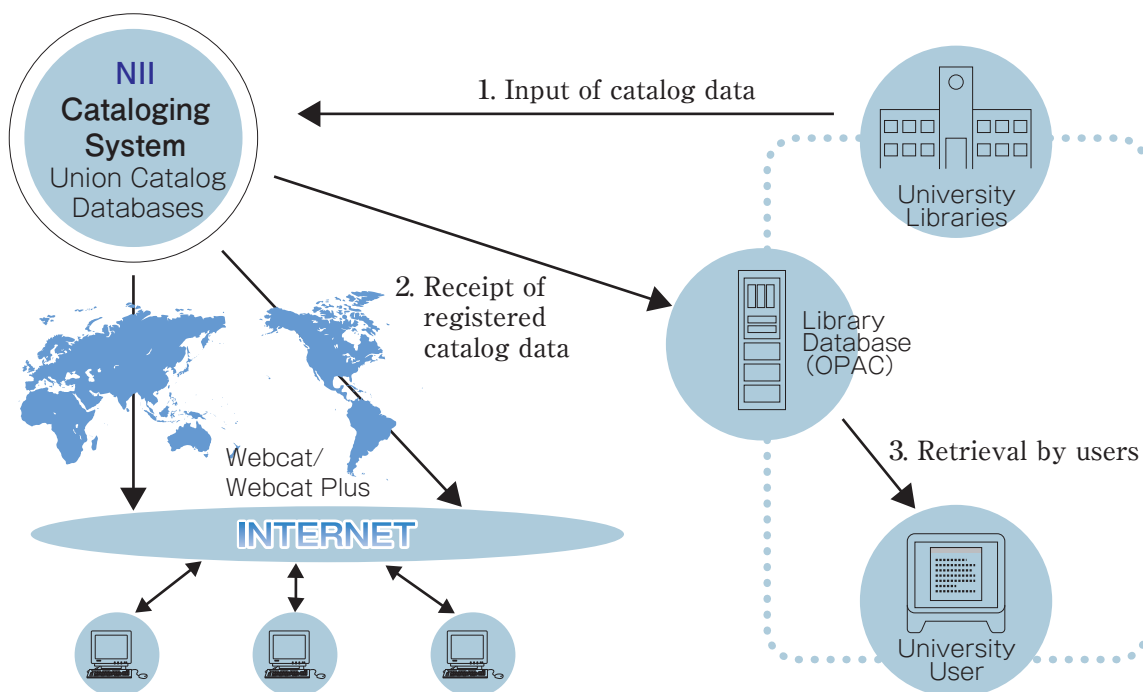
■Trends in number of libraries connected and number of records registered (as of March 2008)
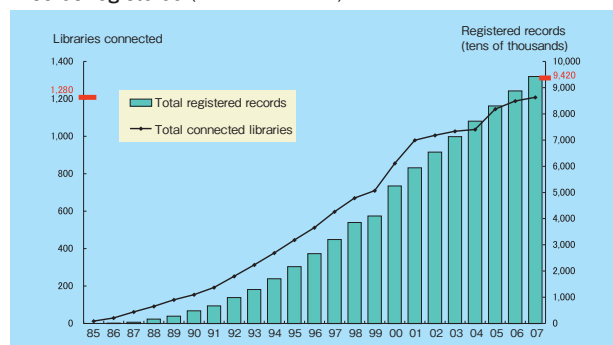
■Number of participating institutions (as of March 2008)

Number of participating institutions	1,208
Domestic	1,106
Universities：696, Junior college：148, Technical college：58, Inter-University Research Institute Corporation：15, Other：189	
Overseas	102
Asia：74, Europe：27, North America：1	

■Frequency of Webcat searches (April 2007-March 2008)

14,805,000

http://webcat.nii.ac.jp/

Contact: NACCSIS-CAT Desk, Scholarly and Academic Information Division
TEL +81-3-4212-2310   FAX +81-3-4212-2375   E-Mail：catadm@nii.ac.jp

The National Center for Science Information Systems (NACSIS) was the forerunner of the National Institute of Informatics (NII). The acronym NACSIS is still used in the names of some NII services.

Interlibrary Loan System (NACSIS-ILL)

The Interlibrary Loan System (NACSIS-ILL) supports the exchange of books and serialized research dissertations among libraries to facilitate the provision of documents to researchers at universities and other institutions.

The service applies the latest information from the union catalog databases constructed by NACSIS-CAT, resulting in improved efficiency and prompt delivery of documents to users.

Users of the system may also request materials from the British Library Document Supply Centre (BLDSC), and may use the interlibrary loan service between overseas university libraries through collaboration with overseas ILL systems (such as the OCLC system in the USA and KERIS in the Republic of Korea).

The efficiency of the system has been enhanced with an offsetting service for ILL document copying and other charges.

University Libraries → 2. Order → NII Interlibrary Loan System — Union Catalog Databases
1. Request / 5. Delivery — University Laboratories
3. Receipt
4. Photocopying and sending

University Libraries
British Library Document Supply Centre(BLDSC)
OCLC Online Computer Library Center, Inc
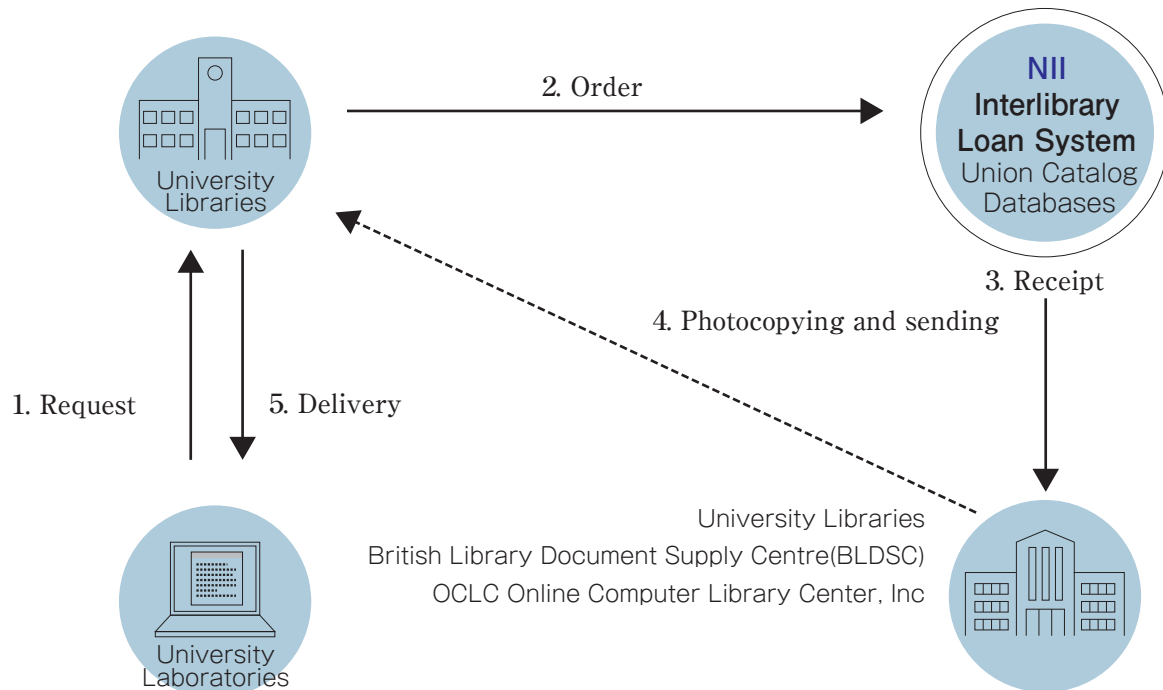
State of use of the ILL system (as of March 2008)

ILL record numbers (tens of thousands)
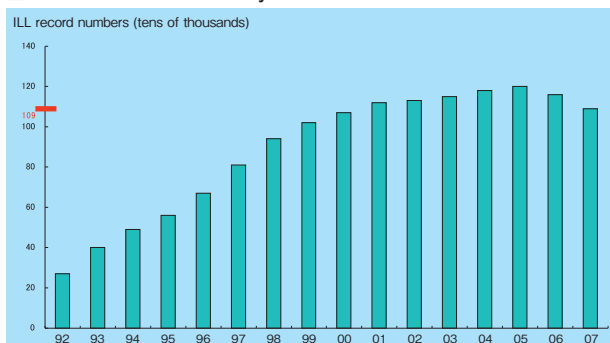
■ User institutions (as of March 2008)	
User institutions	1,063
Institutions participating in ILL charge offsetting service	728

■ Global ILL participating institutions

Japan-US ILL: Japan 143 US 63	
Japan-ROK ILL: Japan 108 ROK 252	

Contact: NACSIS-ILL Desk, Scholarly and Academic Information Division
TEL: +81-3-4212-2320   FAX: +81-3-4212-2375   E-mail: illadm@nii.ac.jp

International Scholarly Communication Initiative (SPARC Japan)

http://www.nii.ac.jp/sparc/

Background

To promote academic research, it is important that research results are rapidly circulated through scholarly papers and that researchers and students are always able to access the latest research results. Moreover, a record of the published scholarly papers of an individual or group is an important tool for evaluating that entity's research activities in the respective countries and academic fields.

In North America and Europe, SPARC (Scholarly Publishing & Academic Resources Coalition) has been promoting efforts aimed at generating a new scholarly communication model to compete with the high cost of commercial scholarly journals, mainly through activities in university libraries, as a movement for reform of scholarly communication.

In recent years, particularly, there have been positive initiatives in dissemination and advocacy activities as well as support for the creation of institutional repositories, with a view to establishing an "Open Access" model for barrier-free access to research results.

Activities

This project began in FY2003 for strengthening the electronic journals of the scholarly publications of Japan's academic societies, with a view to keeping in the hands of Japanese researchers the outstanding research results that are currently published abroad and further promoting the international dissemination of research results.

NII has promoted the project in collaboration with academic societies and university libraries in Japan, the Japan Science and Technology Agency (JST), SPARC (USA) and SPARC Europe, helping to establish a system that facilitates affordable electronic publication of internationally recognized Japanese academic journals.

So far, 45 issues of English-language scholarly journals have been selected as SPARC Japan publishing partner journals, and support activities are currently in progress.

SPARC Japan publishing partner journals of biology and mathematical area have collaborated with BioOne and Project Euclid that SPARC (USA) has supported, and a part of the partner journals have concluded site license contracts with university libraries.

NII has also been engaged in a wide range of related efforts for other partner journals, such as investigating e-journal strategies, developing and introducing electronic submission and peer-review systems, assessing optimal business models, and planning or supporting the launch of new e-journals.

In addition to these support activities, NII has hosted a number of seminars and symposia concerning the problems facing scholarly communication and initiatives for reform, as dissemination and advocacy activities aimed at researchers, academic societies and university libraries based on the Memorandum of Understanding between NII and SPARC

Contact: SPARC Japan Desk, Scholarly and Academic Information Division
TEL: +81-3-4212-2360   FAX: +81-3-4212-2370   E-mail: sparc@nii.ac.jp

Education and Training Programs

The National Institute of Informatics provides a range of training programs for university and other academic personnel responsible for scientific and academic information at universities and elsewhere.

User Training

NII offers database/operation training courses for those working in NACSIS-CAT/ILL services. Regional courses are also offered in conjunction with university libraries. NII also advances the development of self-learning materials that can be used on the web.

■ **NACSIS-CAT Training Courses (Book course/Serial course)**
This course provides the opportunity to learn the structure of NACSIS-CAT, its contents, data uploading methods (input standards), and operation rules.

■ **NACSIS-ILL Training Course**
This course provides the opportunity to learn the structure of NACSIS-ILL, its contents, and operation rules.

Advanced Training Programs

NII provides opportunities for academic research support staff at universities and research institutes to learn the latest in specialized and advanced technologies.

■ **NACSIS-CAT/ILL Workshop**
This workshop provides training for core staff responsible for cataloging systems in the form of a discussion about the various tasks on NACSIS-CAT/ILL.

■ **Academic Portal Training Course**
This course equips participants with professional expertise and skills for the construction and administration of information services and academic portals.

■ **Academic Information Literacy Training Course**
This course provides professional expertise and skills in academic information literacy.

■ **Seminar for University Librarians**
This course equips junior university library personnel with the latest skills necessary for the library management in the future.

■ **Karuizawa Information Processing Seminar**
This seminar provides training for key academic research support personnel in the latest technologies and theories of information processing, specifically with respect to the rapidly developing infrastructure of academic information.

Academic Portal Training Course (Nagoya University Hall)

■ **Information Security Training Course**
This course provides a basic grounding in information security and protection issues.

■ **Network Security Technical Training Course**
This course provides training in practical security techniques to enable network security managers to counter network threats.

■ **Network Administration Training Course**
This course provides training in LAN operation and administration.

NII Practical Training Course

This course provides core academic research support personnel with training in advanced academic information systems through hands-on experience at NII facilities.

Theme and curriculum are determined between NII, trainees, and the institutions they belong to.

Cooperation for User Training Sponsored by Universities

To support guidance and user training on NII services sponsored by universities and academic societies, NII offers a number of services, for example providing training texts or materials curriculum advice, and assignment of user IDs.

Collaboration with Other Organizations

In collaboration with other related organizations, NII presents a variety of training courses in order to train core academic research support staff.

Contact: Infrastructure Planning Division
TEL +81-3-4212-2177 FAX +81-3-4212-2230 E-Mail：edu@nii.ac.jp

Research Cooperation/Intellectual Properties

The NII actively advances research into grants-in-aid for scientific research, as well as research into private-sector funding (such as through commissioned research), and contributes to society through utilizing intellectual property that is created, acquired, and managed by NII.

■ Grants-in-aid for Scientific Research (FY2007) (as of March 2008)

Research Categories	Number	Awarded Amount (thousands of yen)
Specially Promoted Research	1	149,890
Scientific Research(A)	4	54,990
Scientific Research(B)	14	71,240
Scientific Research(C)	12	17,810
Exploratory Research	4	5,600
Encouragement of Young Scientists(A)	5	36,270
Encouragement of Young Scientists(B)	11	13,900
Encouragement of Young Scientists (launch of activities)	3	2,820
Scientific Research in Priority Areas	13	384,200
Special Purposes	6	5,000
Publication of Scientific Research Results	1	6,000
Total	74	747,720

■ Adjustment cost for the promotionof science and technology
(FY2007) (as of March 2008)

	1	99,091 (thousands of yen)

■ University-Industry Cooperation and Collaboration
(FY2007) (as of March 2008)

Research Categories	Number	Amount Received (Thousands of yen)
Joint Research with the Private Sector, etc.	9	53,465
Commissioned Research	27	293,099
Endowments	12	7,442

■ Collaborative Research

As an inter-university research institution, the NII provides opportunities for mutual exchange and research among researchers in universities and research institutions in Japan, while actively promoting many collaborative research projects. As of March 2008, it carried out 106 collaborations and accept a member of collaborative scholars of a total of 520.

■ NII Visiting Researchers (FY2007) (as of March 2008)

Visiting Researchers	(Foreign Research Scholars)	9
	(JSPS Postdoctoral Fellowship for Foreign Researchers)	4
	(Others)	8
Cooperative Scholars		3
Requested Researchers*		2
Project Researchers		66
Research Assistants		25
Special Joint Researchers		27
Total		144

＊Of the whole body of Project Researchers, seventeen have currently been accepted under the postdoctoral researcher system established by the NII.

■ Total Number of Inventions and Applications for Patents (total number sincce FY2004) (as of March 2008)

Total	Attribution	
	Organization Attribution	Individual Attribution
54	53	1

Applications Number	Domestic Number	foreign number	registration number	Domestic Number	foreign number
56	52	15	3	2	1

NII Library

The NII Library holds a number of books and periodicals on informatics, including domestic and overseas scholarly journals as part of its role as an informatics research/education center. Library collaborates with the nearby Meiji University Library to provide access to information of academic documents for students of the Graduate University for Advanced Studies.

■ Inventory, Magazine titles (end of March 2008)

Document type	Books	Bound journals	Journals (in title)
Domestic documents	8,770	7,134	207
Foreign documents	9,626	7,322	202
Total	18,396	14,456	409

■ Major on-line journals and databases

	Service	Publisher
1	ACM Digital Library	ACM
2	MathSciNet	AMS
3	ASPP	IEEE
4	e-Proceedings	IEEE Computer Society
5	COMSOC DL	IEEE Communications Society
6	Wiley Interscience	John Wiley & Sons
7	CUP online	Cambridge University Press
8	OUP online	Oxford University Press
9	Springer Link	Springer
10	Science Direct	Elsevier B.V.

■ Facility, Equipment

	Reading room	Stack room
Area	140m^2	271m^2
Seats	8	3
PC for search	2	1
Other equipment	Automatic Book Circulation Machine (Sumitomo 3M ABC-III)	Micro reader printer (Konika Minolta SP7000)
	Copier (FUJI XEROX ApeosPort C5540I)	

Reading room1

Reading room2

Stock room

Subscribed journals

Contact: Information Service Team, Information Technology Center
TEL +81-3-4212-2140   FAX +81-3-4212-2150   E-Mail：library@nii.ac.jp

International Exchange

Global Liaison Office (GLO)

The NII established the Global Liaison Office (GLO) in order to actively promotes actively promotes international cooperation with prominent overseas institutes. The GLO is concluding International Exchange Agreement (MOU) with the organizations and implementing a variety of measures that promotes international research exchanges

International Exchange Agreement (MOU)

The NII actively promotes conclusion of International Exchange Agreement (MOU, memorandum of understanding) with overseas universities and research institutions, and holds various exchange activities such as joint research project, interactions between researchers and students, and seminar/symposium.

Also, "MOU Grant" and "NII International Internship Program" support dispatch and invitation of researchers and students between MOU institutes. As of April 2008, MOU institutes/universities are over 49 in 16 countries in Asia, Oceania, North America, and Europe.

■MOU on cooperative research: (as of April 2008)

(for research cooperation)	
Thailand	Chulalongkorn University
	Kasetsart University
	National Electronics and Computer Technology Center, National Science and Technology Development Agency (NECTEC)
Republic of Korea	Korea Institute of Science and Technology Information
	Dept. of Computer Science and Engineering, Seoul National University
Singapore	School of Computing, National University of Singapore
People's Republic of China	Department of Automation, School of Information Science and Technology, Tsinghua University
	Chinese Academy of Sciences
	School of Electronics and Information Engineering, Tongji University
People's Republic of Bangladesh	University of Dhaka
Vietnam	International Research Centre Multimedia Information, Communication and Applications, Hanoi University of Technology
	Hanoi University of Technology
	Vietnam National University of Ho Chi Minh City
Australia	The Australia-Japan research centre, of the Australian National University
	National ICT Australia Limited (NICTA)
	The Faculty of Engineering and Computer science, The University of Queensland
USA	School of Engineering and Computer Science, University of Michigan-Dearborn
	College of Engineering, University of Washington, Seattle
	TransPAC2 Project and Indiana University
	Department of Computer Science, The University of North Carolina at Charlotte
	Department of Computer Science, University of Maryland
	New Jersey Institute of Technology
Canada	Faculty of Mathematics, University of Waterloo
	Faculty of Science, Department of Computing Science, Alberta Ingenuity Centre for Machine Learning (AICML), University of Alberta

	School of Computer Science, McGill University
Irland	The University of Limerick (Lero - the Irish Software Engineering Reserch Centre)
France	Laboratoire d'Informatique de Nantes-Atlantique, Universite de Nantes
	Institut National de Recherche en Informatique et en Automatique
	Institut National Polytechnique de Grenoble
	Universite Joseph Fourier-Grenoble 1
	Computer Science Laboratory of Paris 6
	Institut National Polytechnique de Toulouse
UK	Department of Computer Science Faculty of Engineering Science, University College London
	Faculty of Mathematics and Computing, Open University
	University of Bath
	University of Bristol
	The Department of Computing, Imperial College London
	The Computing Laboratory, University of Oxford
Germany	Faculty of Applied Informatics, University of Augsburg
	German Research Center for Artificial Intelligence (DFKI)
Netherlands	Centre for Mathematics and Computer Science(CWI)
Republic of Italy	Department of Informatics, Torino University
Czech Republic	Czech Technical University in Prague
other	Asian Institute of Technology（AIT）
(for development and operational cooperation)	
USA	North American Coordinating Committee on Japanese Library Resources
	Institute for Scientific Information, Inc.
	Association of Research Libraries (ARL)
Germany	Hochschulbibliothekszentrum des Landes Nordrhein-Westfalen
Republic of Korea	Korea Education & Research Information Service

MOU Grant/Non- MOU Grant

The system of MOU Grants was established in FY 2005 to assist in research related to sending and hosting researchers to promote research-related exchange with overseas research institutions, including those with which MOUs have been concluded. In FY 2006, a new system of Non-MOU Grants was established to assist in research related to the hosting of researchers from overseas research institutions, including those with which no MOUs have been concluded.

This latter initiative includes the acceptance of doctoral students as interns.

In FY 2007, the decision was made to dispatch 19 researchers to a total of seven nations and to accept 41 researchers from a total of 14 nations under both of these grant systems. (The total number of nations to which researchers are dispatched includes multiple countries visited by the same researcher on a single assignment.)

Accepting students from abroad through an international internship program

As part of its student exchange activities with institutions with which it has concluded MOUs, from FY 2007, the NII has accepted overseas students through an international internship program.

The goal of this international internship program is to provide graduate students (in master's and Ph.D courses) from universities and research institutions that have concluded MOUs with the NII the opportunity to take part in research and to receive guidance from professors at NII. Students enroll for two to six months, depending on their research interests.

In FY 2007, the NII accepted a total of 49 interns from institutions with which it had concluded MOUs in ten countries: Thailand, Republic of Korea, China, Vietnam, Australia, the United States, Canada, United Kingdom, Germany, and France.

In addition, the decision has been made to use non-MOU grants to accept four interns from non-MOU institutions in the four nations of India, the United States, Germany, and Italy.

■Names of universities and other institutions sending interns during the 2007 fiscal year and their countries:

Name of university / institution	Number	Country
【International Internship Program】		
Asian Institute of Technology (School of engineering and technology)	2	Thailand
Kasetsart University (Faculty of sciense)	1	Thailand
Chulalongkorn University	3	Thailand
Seoul National University	2	Republic of Korea
Tsinghua University	1	China
Tongji University	2	China
Hanoi University of Technology	1	Vietnam
Vietnam National University of Ho Chi Minh City	6	Vietnam
National ICT Australia Limited (NICTA)	8	Australia
The Australian National University	1	Australia
New Jersey Institute of Technology	3	USA
McGill University	1	Canada
University of Bath	1	UK
University College London	1	UK
University of Augsburg	3	Germany
Institut National Polytechnique de Grenoble	3	France
Universite Joseph Fourier-Grenoble 1	3	France
Institut National Polytechnique de Toulouse	1	France
Université de Nantes	1	France
Université Pierre et Marie Curie (Paris 6)	5	France
【Non-MOU Grant】		
Carnegie Mellon University	1	USA
RWTH Aachen University	1	Germany
ITC-irst	1	Italy
Indian Institutes of Technology	1	India
Total	53 interns	

Intercommunion of researchers

■Acceptance of researchers from abroad (FY2007)

Program		Number of researchers
Japan Society for the Promotion of Science (JSPS)[1]	Postdoctoral Fellowships for Foreign Researchers	5
	Postdoctoral Fellowships for Foreign Researchers (Short-term;for researchers from Western countries)	2
	Invitation Fellowship Program for Research in Japan	0
Other researchers accepted (visiting researchers, visiting professor [full-time])[2]		49

[1] The figures above include those for personal accepting from the previous fiscal year.
[2] The figures above include researchers accepted by the MOU/Non-MOU Grant.

■Overseas Assignment (FY2007)

Faculty researchers are also dispatched as visiting scholars overseas under the Overseas Assignment System for Researchers and Other Personnel, established for purposes including improving the research or operations capabilities of faculty and other personnel.

In FY 2007, three researchers were selected to serve abroad.

Program	number
Overseas Assignment System for Researchers and Other Personnel	5
JSPS Postdoctoral Fellowship for Research Abroad (FY2006 ～ 2years)	1

The figures above include those for personnel remaining abroad on assignments from the previous fiscal year.

Dissemination of Research Results

NII holds lectures and symposia and issues publications under the general aim of disseminating research findings on informatics widely throughout society, and informs details by NII's website and e-mail newsletter.

Open House

NII, a research institution, which is widely open to the public, holds "Open House" two days once a year to present its activities and research results to the public as well as to researchers and Ph.D. candidates.
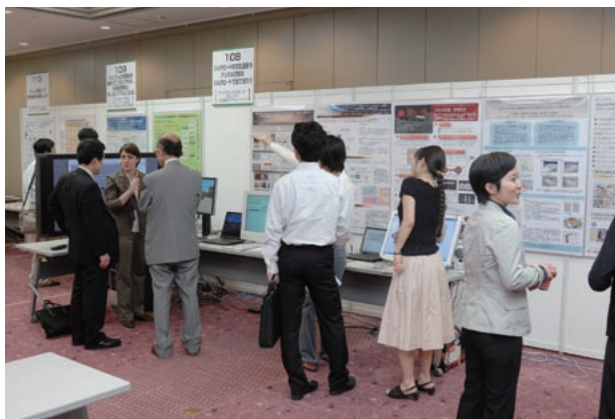
NII Open House (June, 2008)

Symposia and Study Meetings

The NII announces results of research and communicates information by holding symposia and workshops addressing research subjects and the latest issues in informatics from broad-ranging perspectives, welcoming researchers from the front lines of the field in Japan and around the world.

Presentations

NII attempts to disseminate its research results and promote its information service through presentations in various exhibitions

Library Fair & Forum (November, 2007)

Open Lectures and Seminars

NII also holds open lectures and seminars.

■ **NII Public Lectures**

Since the 2003 fiscal year, NII researchers have held public lectures on a wide range of themes related to informatics - a total of eight per year, with no more than one held in any given month - at the National Center of Science in Hitotsubashi, Chiyoda Ward, Tokyo. Some content from past lectures has been made available to the public as streaming media from the NII website. * in Japanese

(http://www.nii.ac.jp/shimin/index.shtml)

(July, 2007)

■ **Karuizawa Saturday Salon**

Each year since the 1998 fiscal year, the International Seminar House for Advanced Studies, Inose Lodge, in Karuizawa has been home to some lectures and recitals led by eminent researchers and experts from various fields. The contents of past lectures have been made available to the public as described below.

・Streaming video of lectures and recitals available on the NII website * in Japanese
・Publication of Karuizawa Doyo-Konwakai Koenshu: Chi to Bi no Harmony ("Collection of Lectures from the Karuizawa Saturday Meetings: Harmony of Intelligence and Beauty") * in Japanese

(http://www.nii.ac.jp/karuizawa/)

Publications

NII publishes books and periodicals detailing its research findings.

■NII Series (Maruzen Library)
This series of commercial books introduces and describes the details of NII research using familiar examples that are easily understood by the general public. * in Japanese (http://www.nii.ac.jp/books/maruzen-lib/index-j.shtml)

NII Series (Maruzen Library)

■Progress in Informatics
Progress in Informatics is an international peer-reviewed journal published by the NII, aiming at the promotion of research and development in the broad area of informatics. The journal provides the international academic community with a venue for discussion and a means of exchanging information covering a wide range of fields involving informatics applications. The published articles consist not only of original research papers but also of surveys and project reports which contribute internationally to the progress of research and development. We ask for submissions for articles all the time.
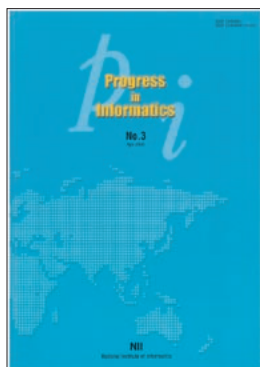
Progress in Informatics

■NII Technical Report
NII Technical Reports are issued as individual publications such as research papers, reference materials, and manuals covering the results of NII research, to serve generally as updates on the NII's research activities. These reports are available through the NII website. (http://research.nii.ac.jp/TechReports/index.html)
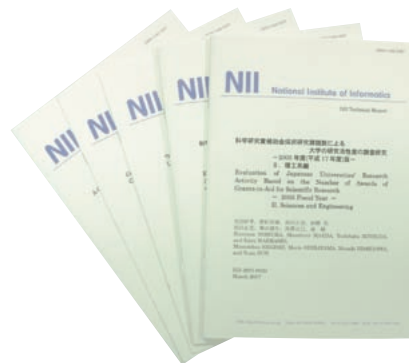
NII Technical Report

■Karuizawa Doyo-Konwakai Koenshu: Chi to Bi no Harmony (No.1-No.5)
("Collection of Lectures from the Karuizawa Saturday Salon: Harmony of Intelligence and Beauty") * in Japanese
This is a collection of lectures from the Karuizawa Saturday lecture meetings (held since the 2000 fiscal year), and donated to university library and prefectural library, etc.
(http://www.nii.ac.jp/karuizawa/harmony.html)

Karuizawa Doyo-Konwakai
Koenshu: Chi to Bi no Harmony

Public information magazine

NII Today (Japanese/English)
Catalogue of NII (Japanese/English)
Outline of NII (Japanese/English)
Annual Report (Japanese)

NII Today No. 22

NII Today No. 23

NII Today No. 24

NII Today No. 25

NII website/E-mail Newsletter

Detailed information is available on the NII website.
URL: http://www.nii.ac.jp/

Information related to the NII, including up-to-date information on a variety of events and other topics, is sent via e-mail. Subscription is free and available at the following URL. * in Japanese
URL: http://www.nii.ac.jp/magazine/nii-mag-top-j.shtml

Staff/Budget

Staff (as of April 1, 2008)

	Director General	Deputy Director General	Professors	Associate Professors	Assistant Professors	Assistant	Subtotal	Other Employees	Total
Full-time Employees	1	1	37	31	13		83	65	148
Visiting Professors etc.			36	18			54		54
Coordinate Professors			3	1			4		4
Specially Appointed Professors etc. (Project-based)			9	7	2	1	19		19
Other Outside Researchers									74
Support Staff									58
Graduate Students									109

Budget (F.Y.2008)

(unit: thousand yen)

Income
11,151,051

Miscellaneous
86,950

Commissioned Operations
382,468

Operation Subsidy
10,681,633

Expenditure
11,151,051

Administrative Expenditure
14,022

Education Equipment Basic Expenditure
274,142

Commissioned Operations
382,468

Special Factor Expenditure
7,190

Inter-University Research Institute Expenditure
3,621,133

Special Education and Research Expenditure
6,852,096

Operation Expenditure
10,768,583

Organization

Director General	— Advisory Board
Masao Sakauchi	
- - - - - - - - - - - - - - - - - - -	Administrative Council

Deputy Director General
Yohichi Tohkura

Executive Director of Research —— Research Division
Yohichi Tohkura

Research Center

Organization for Management and Outside Collaboration on R&D

Planning and Promotion Strategy Department
Director: Yohichi Tohkura

- **Director**
  Director: Kiyohiko Sakai
  - Planning Team
  - Evaluation Team
  - Publicity and Dissemination Team
- **Global Liaison Office**
  Acting Director: Henri Angelino
- **Intellectual Property Office**
  Director: Yohichi Tohkura

Cyber Science Infrastructure Development Department
Director: Jun Adachi
Deputy Director: Hitoshi Hayase

- **Infrastructure Planning Division**
  Director: Hitoshi Hayase
  - Coordination and Training Team
  - Inter-Universities System Team
- **Academic Network Division**
  Director: Yoshiyasu Shizuta
  - SINET Planning Team
  - SINET Operation Team
- **Scholarly and Academic Information Division**
  Director: Kohichi Ojiro
  - GeNii Development Team
  - Library Liaison Team

General Affairs Department
Director: Masahiko Higashi

- **General Affairs Division**
  Director: Ryohei Tsukamoto
  - General Affairs Team
  - Personnel Affairs Team
- **Budget and Accounts Division**
  Director: Kimio Sasayama
  - Budget Planning and Account Settlement Team
  - Accounts Team
- **Research and Education Promotion Division**
  Director: Satotaka Hanazaki
  - Research Promotion Team
  - International Affairs and Education Support Team
  - Outside Research Fund Team

Information Technology Center
Director: Keizo Oyama

- Information Service Team
- Networking and Computing Service Team

Organization for Promoting Cooperation with Society and Industry

Left column (boxes)

Principles of Informatics Research Division
Director: Asao Fujiyama

Information Systems Architecture Science Research Division
Director: Shinichi Honiden

Digital Content and Media Sciences Research Division
Director: Keizo Oyama

Information and Society Research Division
Director: Noboru Sonehara

Center for Grid Research and Development
Director: Kenichi Miura

Research and Development Center for Informatics of Association
Director: Akihiko Takano

Grace Center: Center for Global Research in Advanced Software Science and Engineering
Director: Shinichi Honiden

Research Center for Community Knowledge
Director: Noriko Arai

Strategic Research Projects Incubation Center
Director: Yohichi Tohkura

Research and Development Center for Academic Networks
Director: Shigeki Yamada

Research and Development Center for Scientific Information Resources
Director: Hideaki Takeda

Organization for Science Network Operations and Coordination
Director: Masao Sakauchi

Organization for Scientific Resources Operations and Coordination
Director: Masao Sakauchi

Organization for Value Creation in Informatics

Collaborative Research Unit

Principles of Informatics Research Division

Professor	Katsumi Inoue	Ken Satoh	Hideaki Takeda	Makoto Tatsuta
	Ken Hayami	Asao Fujiyama	Yoshihisa Yamamoto	Keiichi Kuma
Associate Professor	Ryutaro Ichise	Tetsunari Inamura	Takeaki Uno	Kenichi Kawarabayashi
	Makoto Kanazawa	Nigel Henry Collier	Hiroko Satoh	Kae Nemoto
	Keiji Matsumoto			
Assistant Professor	Shoko Utsunomiya	Yodai Watanabe		

Information Systems Architecture Science Research Division

Professor	Shoichiro Asano	Shigeo Urushidani	Zhenjiang Hu	Ichiro Satoh
	Shin Nakajima	Hiromichi Hashizume	Shinichi Honiden	Katsumi Maruyama
	Kenichi Miura	Shigeki Yamada	Tomohiro Yoneda	Kento Aida
	Motonori Nakamura			
Associate Professor	Shunji Abe	Yusheng Ji	Kensuke Fukuda	Hiroshi Hosobe
	Takashi Matsumoto	Nobukazu Yoshioka		
Assistant Professor	Michihiro Koibuchi	Soichiro Hidaka		

Digital Content and Media Sciences Research Division

Professor	Akiko Aizawa	Jun Adachi	Keizo Oyama	Shinichi Satoh
	Akihiro Sugimoto	Atsuhiro Takasu	Akihiko Takano	Seiji Yamada
	Shingo Nishioka			
Associate Professor	Kenro Aihara	Isao Echizen	Norio Katayama	Asanobu Kitamoto
	Kazuya Kodama	Imari Sato	Frederic Andres	Helmut Prendinger
	Kazutsuna Yamaji			
Assistant Professor	Fuyuki Ishikawa	Masashi Inoue	Ikki Ohmukai	Hiroyuki Kato
	Hiroshi Mo			

Information and Society Research Division

Professor	Noriko Arai	Noriko Kando	Sumio Kakinuma	Teruo Koyama
	Noboru Sonehara	Yohichi Tohkura	Masamitsu Negishi	Akira Miyazawa
Associate Professor	Hitoshi Okada	Hironobu Gotoda	Morio Shibayama	Yuan Sun
	Masaki Nishizawa	Nobuhiro Furuyama		
Assistant Professor	Kouichirou Ueki	Masashi Ueda	Takashi Koga	Tetsuro Kobayashi

SINET Promotion Office
Director: Shunji Abe

Visiting Professor	Henri Angelino (Full-time)		Michael E Houle (Full-time)	Kiyoshi
	Agusa	Keijirou Araki	Anthony Finkelstein	Katsushi Ikeuchi
	Toru Ishida	Katsuro Inoue	Kazunori Ueda	Atsushi Ohnishi
	Hisamichi Okamura	Mizuhito Ogawa	Mitsuhiro Kishimoto	Masaru Kitsuregawa
	Shu Kuramoto	Sadao Kurohashi	Takashi Gojobori	Kazunobu Konishi
	Naohisa Komatsu	Motoshi Saeki	Masaaki Sugihara	Masato Takeichi
	Yuzuru Tanaka	Yoshiaki Tanaka	Shigeaki Tanimoto	Syun Tsuchiya
	Yoshiki Niwa	Akihiro Hada	Bashar Nuseibeh	Yoshiaki Fukazawa
	Hideo Matsuda	William John Munro	Shinichi Mineo	Hiroshi Yasuda
	Hayato Yamana	Katsuya Watanabe		
Visiting Associate Professor	Ichiro Ide	Tomoo Inoue	Kouji Eguchi	Haruhiko Kaiya
	Kyo Kageura	Ken Kaneiwa	Eiji Kamioka	Hideaki Kikuchi
	Kenjiro Taura	Koichi Takeuchi	Tao Zhang	Keita Tsuji
	Kazushige Terui	Yuko Noguchi	Takayuki Fujino	Mio Murao
	Katsunori Yamaoka	Masaharu Yoshioka	Hironori Washizaki	
Coordinate Professor	Satoshi Tojo	Taisuke Sato	Yasuo Tan	
Coodinate Associate Professor	Tsuyoshi Murata			

Professor (by Special Appointment)	Shuichi Itahashi	Haruki Ueno	Hitohide Usami	
	Kinji Ono	Hironobu Kuruma	Kenji Taguchi	
	Toshihiko Tsumaki	Takako Nakatani	Masami Nakamura	
Associate Professor (by Special Appointment)	Yoshinao Isobe	Toshiyuki Kataoka	Fumihiro Kumeno	
	Kei Kurakawa	Masaki Shimaoka	Makoto Nonaka	
	Yayoi Hirose	Yuzo Marukawa		
Assistant Professor(by Special Appointment)	Rihoko Inoue	Kenji Tei		
Project Assistant	Arihiro Yoshida			

Facilities / Location

National Center of Sciences

The National Center of Sciences was established as a center for scientific research in informatics, for academic exchanges, for the dissemination of scientific information, and to provide to society as a whole the benefits of an infrastructure of academic research in Japan. Construction was completed in December 1999. The Center consists of three principal institutions: the NII, the Hitotsubashi University Graduate School of International Corporate Strategy, and the Center for University Finance. The Center aims to provide a developed base for intellectual creativity through the comprehensive application of the academic functions of each institute. Conference facilities are located in the lower floor of the building, including the Hitotsubashi Memorial Hall. These are available for use for various activities, such as international conferences, lectures, and other academic meetings organized by national universities.
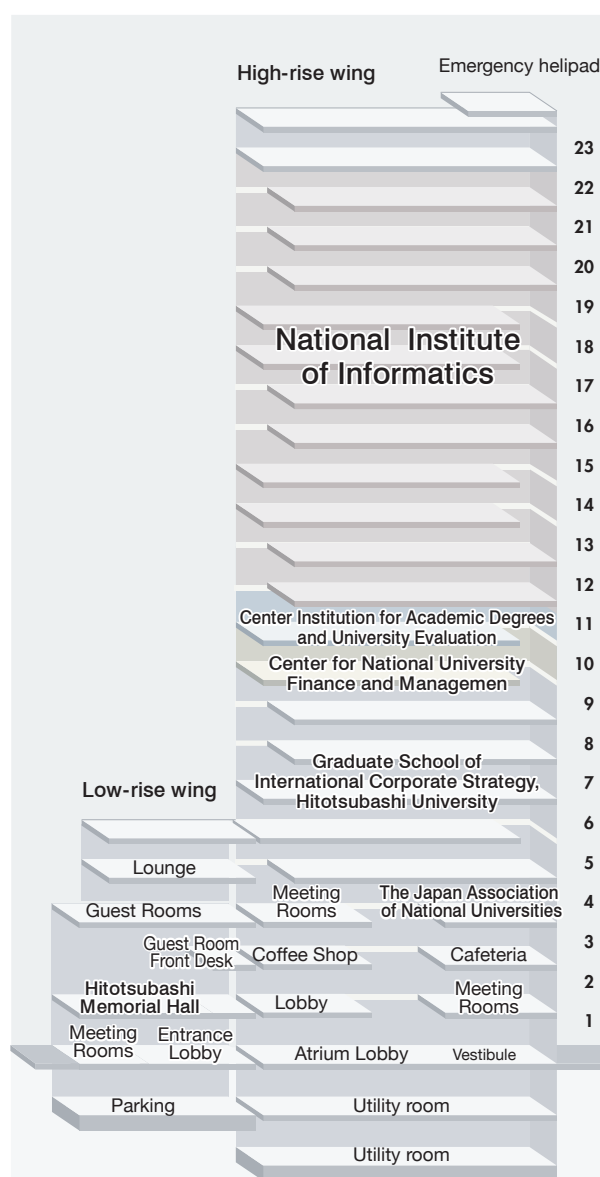

National Center of Sciences

Hitotsubashi Memorial Hall

National Institute of Informatics (NII)

http://www.nii.ac.jp/

National Center of Sciences Bldg. 2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo 101-8430
TEL. +81-3-4212-2000 (Exchange)

High-rise wing — Emergency helipad

Floor	
23	
22	
21	
20	
19	
18	National Institute of Informatics
17	
16	
15	
14	
13	
12	
11	Center Institution for Academic Degrees and University Evaluation
10	Center for National University Finance and Managemen
9	
8	
7	Graduate School of International Corporate Strategy, Hitotsubashi University
6	
5	Lounge
4	Guest Rooms / Meeting Rooms / The Japan Association of National Universities
3	Guest Room Front Desk / Coffee Shop / Cafeteria
2	Hitotsubashi Memorial Hall / Lobby / Meeting Rooms
1	Meeting Rooms / Entrance Lobby / Atrium Lobby / Vestibule

Low-rise wing

Parking — Utility room

Utility room

National Institute of Informatics
Site area ： **6,842m²** (Occupied by NII : 3,036m²)
Floor space ： **40,585m²** (Occupied by NII : 18,145m²)

■Guide Map

Sumida River
Ikebukuro
Ueno
Shinjuku
The Imperial Palace
Tokyo
Shibuya
Shinagawa

■Route Map

Kudanshita Sta.
Jimbōchō Sta.
Shinjuku Sta.
Ōtemachi Sta.
Shibuya Sta.
Takebashi Sta.
Mita Sta.
Tokyo Sta.
Narita Airport
Shinagawa Sta.
Hamamatsucho Sta.
Haneda Airport
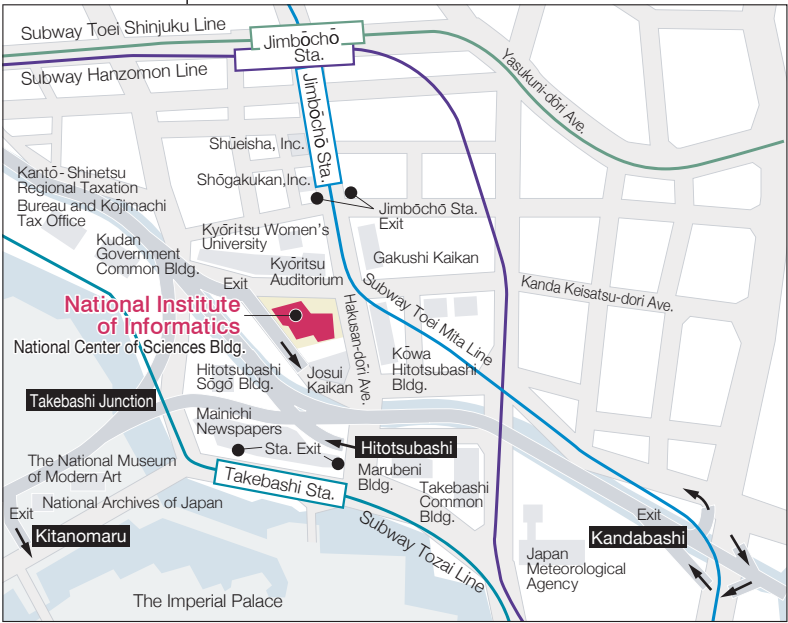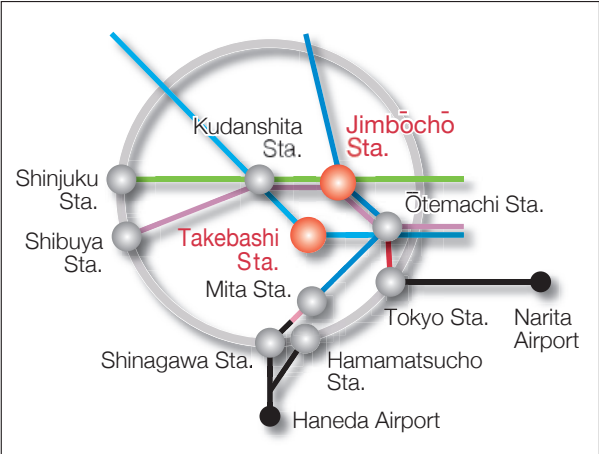
Subway Toei Shinjuku Line
Subway Hanzomon Line
Subway Toei Mita Line
Subway Tozai Line

Subway Toei Shinjuku Line
Jimbōchō Sta.
Subway Hanzomon Line
Jimbōchō Sta.
Yasukuni-dōri Ave.
Shūeisha, Inc.
Kantō - Shinetsu Regional Taxation Bureau and Kōjimachi Tax Office
Shōgakukan,Inc.
Jimbōchō Sta. Exit
Kyōritsu Women's University
Gakushi Kaikan
Kudan Government Common Bldg.
Kyōritsu Auditorium
Kanda Keisatsu-dori Ave.
Exit
National Institute of Informatics
Subway Toei Mita Line
Hakusan-dōri Ave.
National Center of Sciences Bldg.
Hitotsubashi Sōgō Bldg.
Josui Kaikan
Kōwa Hitotsubashi Bldg.
Takebashi Junction
Mainichi Newspapers
Sta. Exit
Hitotsubashi
The National Museum of Modern Art
Marubeni Bldg.
Takebashi Sta.
Takebashi Common Bldg.
National Archives of Japan
Exit
Kitanomaru
Subway Tozai Line
Kandabashi
Exit
Japan Meteorological Agency
The Imperial Palace

Facilities / Location

Chiba Annex (Inage-ku, Chiba City)

The Chiba Annex is a facility for computer systems and networking equipment used to operate the Science Information System and to provide scientific information services. It was built in November 1994 and is located in the Chiba Experiment Station of the Institute of Industrial Science of the University of Tokyo.
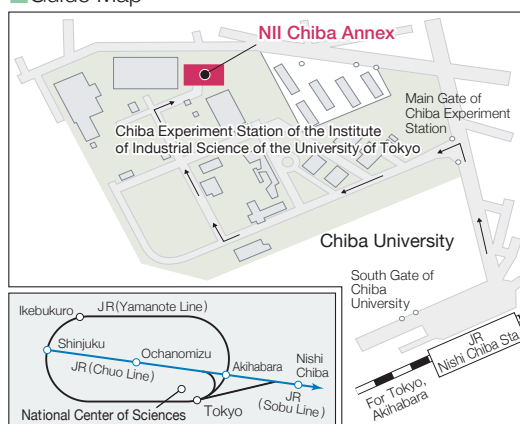
Chiba Annex

1-8 Yayoi-cho, Inage-ku, Chiba-shi, Chiba 263-0022
TEL. +81-43-285-4911 (Exchange)

■Guide Map

Site area (rented) : **1,782m²**
Floor space : **3,943m²**

International Seminar House for Advanced Studies Inose Lodge (Karuizawa Town, Nagano Prefecture)

The International Seminar House for Advanced Studies, or Inose Lodge, was built on land donated by Dr. Hiroshi Inose, the first director general of NII. His idea was to create an ideal place for interdisciplinary and international discussions.

Uses
1) Domestic and international academic conferences, seminars, etc.
2) Public lectures and social gatherings, etc.
3) Research and training of NII researchers and staff.
http://www.nii.ac.jp/introduce/seminar1.shtml

International Seminar House for Advanced Studies Inose Lodge

http://www.nii.ac.jp/introduce/seminar1.shtml

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■Guide Map

Seminar at the International Seminar House for Advanced Studies
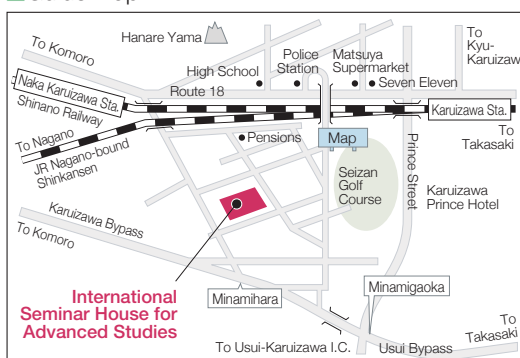
Site area : **3,339m²**
Floor space : **667m²**

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