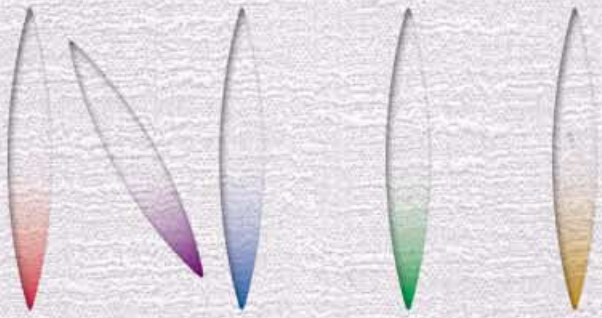
National Institute of Informatics

2005-2006



NII

Inter-University Research Institute Corporation/
Research Organization of Information and Systems

National Institute of Informatics

Introduction

Academic research organizations are now under increased pressure to clarify their mission and roles, plan and implant unique activities, and to effectively demonstrate their various successes.

The National Institute of Informatics (NII) has designed the following missions and roles: To create future value (create scholarship) as Japan's sole comprehensive academic research institute in field of informatics; to attain the status of national, center for informatics research activities; 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, and through the above efforts, realize the effective contributions to international as well as domestic society.

It has been five years since the NII was founded, and these missions have now reached a particularly important stage, after the ten year's history of 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 next-generation information infrastructure 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. There is therefore an urgent need to develop academic information infrastructure seamlessly toward the next-generation's one.

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.

April 2005

Masao Sakauchi

Director General, National Institute of Informatics
Inter-University Research Institute Corporation/
Research Organization of Information and Systems

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.

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
Yasuyoshi Inagaki	Professor, Faculty of Information Science and Technology, Aichi Prefectural University
Sumiko Iwao	Professor, Faculty of Environmental and information studies, Musashi Institute of Technology
Hidehiko Tanaka	Director, Graduate School of Information Security, Institute of Information Security
Hozumi Tanaka	Professor, School of Computer and Cognitive Sciences, Chukyo University
Mitsutoshi Hatori	Professor, Faculty of Science and Engineering, Chuo University
Yoichi Muraoka	Vice President, Waseda University
Yoshifumi Yasuoka	Professor, Institute of Industrial Science, University of Tokyo
Kahei Rokumoto	Professor (by Special Appointment), University of the Air
Katsumi Wakabayashi	Professor Emeritus, Gunma University
Yoh'ichi Tohkura	Deputy Director General, NII
Masamitsu Negishi	Director, International and Research Cooperation Departmant, NII
Jun Adachi	Director, Development and Operations Department, NII
Asao Fujiyama	Director, Foundations of Informatics Research Division, NII
Shoichiro Asano	Director, Infrastructure Systems Research Division, NII
Katsumi Maruyama	Director, Software Research Division, NII
Shinichi Honiden	Director, Intelligent Systems Research Division, NII
Teruo Koyama	Director, Human and Social Information Research Division, NII
Akira Miyazawa	Director, Research Information Research Division, NII
Shigeki Yamada	Director, Research Center for Testbeds and Prototyping, NII
Haruki Ueno	Professor, Intelligent Systems Research Division, NII

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.

Toshiharu Aoki	Counselor and Senior Vice President, NTT Data Corporation
Hiroyuki Abe	Professor Emeritus, Tohoku University
Akito Arima	Chairman, Japan Science Foundation
Setsuho Ikehata	President, Tokyo University of Foreign Studies
Toshiaki Ikoma	Professor Emeritus, University of Tokyo (Representative Executive Officer and Director, Hitachi Metals, Ltd.)
Keijiro Inai	President, Japan Audio-Visual Education Association
Takayoshi Inoue	Chairperson, University of the Air Foundation
Isao Uchida	Advisor, Japan Space Forum
Hitoshi Osaki	Administration Officer, Inter-University Research Institute Corporation / National Institutes for the Humanities
Kazuki Okimura	President, Japan Science and Technology Agency
Motoyuki Ono	President, Japan Society for the Promotion of Science
Taku Kajiwara	Former Governor, Gifu Prefecture
Nobuaki Kumagai	President, University of Hyogo / Professor Emeritus, Osaka University
Takao Kurosawa	Librarian, National Diet Library, Japan
Takashi Sakamoto	Professor Emeritus, National Institute of Multimedia Education (President, Japan Association for Promotion of Educational Technology)
Takamitsu Sawa	Director, Institute of Economic Research, Kyoto University
Tsukasa Shimizu	President, Tokyo Kasei University
Atsuko Toyama	Former Minister of Education, Culture, Sports, Science and Technology
Yoji Totsuka	Director General, High Energy Accelerator Research Organization
Norihisa Doi	Professor Emeritus, Keio University
Keiko Nakamura	Director General, JT Biohistory Research Hall
Makoto Nagao	President, National Institute of Information and Communications Technology
Saburo Nagakura	President, the Japan Academy
Hiroshi Nozaki	President and Chair, National Museum
Ryoji Noyori	President, RIKEN
Masuko Honda	Former President, Ochanomizu University
Yoichi Matsuno	Director General, National Institute of Japanese Literature
Kanichi Miyachi	Advisor, Association for Promotion of Satellite Education
Hideo Miyahara	President, Osaka University
Hiroyuki Yoshikawa	President, National Institute of Advanced Industrial Science and Technology
Edward E. David, Jr.	Former Science Advisor to the President of the United States
James L. Flanagan	Vice President for Research, Rutgers, the State University of New Jersey
John M. Thomas	Professor, Univeristy of Cambridge
Lewis M. Branscomb	Professor Emeritus, Harvard University
Lofti A. Zadeh	Professor, University of California, Berkeley
David J. Farber	Professor, University of Pennsylvania
Takeo Kanade	Professor, Carnegie Mellon University
Robert Kowalski	Professor Emeritus, Imperial College
Gerard Van Oortmerssen	Director, TNO-Telecom
Walter L. Engle	Professor Emeritus, RWTH Aachen University of Technology
Herwig Kogelnik	Adjunct Photonics System Research Vice President, Bell Laboratory
Charles Kao	Former Vice Chancellor of the Chinese University in Hong Kong
Gilles Kahn	President, Institut National de Recherche en Informatique et en Automatique
Gerard Huet	Director, Institut National de Recherche en Informatique et en Automatique

Advisor (National Institute of Informatics)

Yasuharu Suematsu	Former Director General, National Institute of Informatics

Professor Emeritus (NACSIS: National Center for Science Information Systems)

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

Professor Emeritus (NII: National Institute of Informatics)

Takamitsu Sawa	Director, Institute of Economic Research, Kyoto University
Mitsutoshi Hatori	Professor, Faculty of Science and Engeneering, Chuo University
Yasuhiro Suematsu	Former Director General, National Institute of Informatics
Eisuke Naito	Professor, Faculty of Sociology, Toyo University
Kinji Ono	Visiting Professor, Waseda University
Takeo Yamamoto	Former Director, Multimedia Information Research Division, National Institute of Informatics

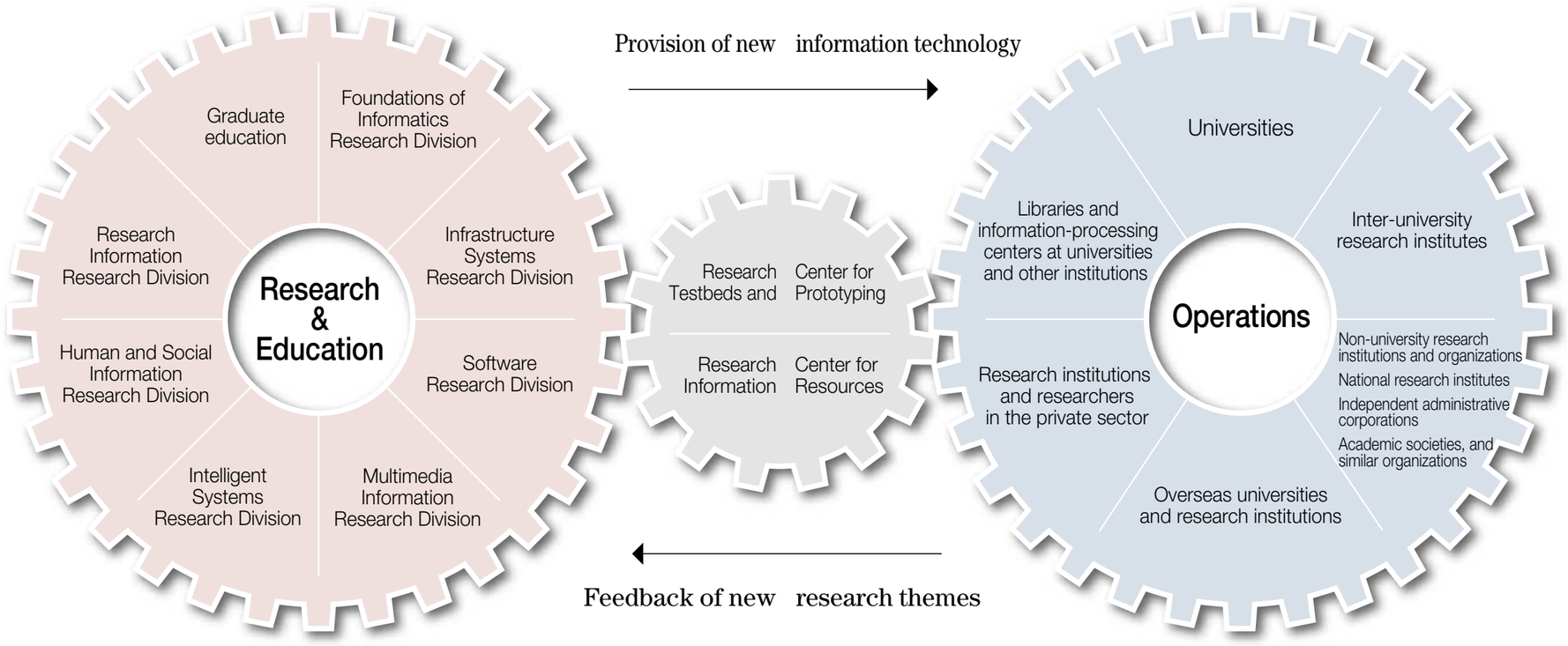
Professor (by Special Appointment)

Kinji Ono	Visiting Professor, Waseda University

Advancing research and operations in tandem

The National Institute of Informatics (NII) was founded in April 2000 as an inter-university research institute organized to conduct comprehensive research on informatics and to develop an advanced infrastructure for disseminating scientific information.
At April 2004, NII has re-started as a member of Research Organization of Information and Systems.

The NII applies a long-term perspective to a broad range of R&D, from the basics to applications in information-related fields (networks, software, multimedia, etc.).
At the same time, the NII seeks a comprehensive approach to progress in informatics research by working closely with universities, national research institutes, and private research institutions.



Research Activities

The NII deals with the innovative and growing field of Informatics, not only covering computer and information science but also incorporating the human, social, and life sciences. The institute advances and synthesizes information research into comprehensive study within an interdisciplinary approach involving partnerships with industry, the government, and academia. Its international research activities involve 35 branches in seven divisions, as well as eight laboratories in two research centers.

Operations

The NII has established an office for the construction and operation of a scientific information infrastructure, involving cooperation and partnership with university libraries, academic societies, and similar institutions. The aim is to develop and apply a range of systems that will form an infrastructure for scientific information in Japan. Organizations and structures will be established to support researchers, including verification and application of research results, in close partnership and cooperation with numerous research organizations.

Comprehensive basis to applied research

The NII conducts highly scientific, forward-looking information-related research covering a broad range of fields, from the natural sciences to the humanities and social sciences. In this process the NII effectively integrates the theoretical and the practical in its combination of basic and applied research.

Interdisciplinary approach

The NII promotes lateral interdisciplinary research linking diverse research domains through wide-ranging collaborative efforts. As such the institute provides an effective forum for more advanced and comprehensive scientific research, contributing significantly to the growth and development of entire academic fields.

Partnership with industry, government, and academic sectors

The NII works in close partnership with universities, national institutions, and private research institutions in an effort to advance the field of informatics in Japan. The NII undertakes specific joint research projects in cooperation with these organizations, and promotes the effective use of the results of this research throughout the community.

International research activities

The NII strives to expand its reach to the international community through exchanges with overseas researchers and joint research with overseas research institutions. The NII also contributes to the development and application of international standards.

Development of an infrastructure for scientific information

The NII plays a pivotal role in developing an infrastructure of scientific information in Japan through the construction and operation of the Science Information Network, the production of a comprehensive catalog of books and journals held by university libraries and similar facilities, the development and provision of scientific databases, and educational and training programs for university library staff.

Graduate education (Ph.D. program)

As a core organization of the Graduate University for Advanced Studies, the NII has established a Ph.D. program in Informatics to educate researchers and specialists with expertise in a broad range of fields, providing the solid grounding in advanced informatics they will require as leaders in the field.

Foundations of Informatics Research

Providing the foundation for the future through basic researchs

Strong normalization of second order natural deduction with permutative conversions

Strong normalization of second order natural deduction with permutative conversions was proved. This system consists of implication, conjunction, disjunction, first order universal quantification, first order existential quantification, and second order universal quantification. Strong normalization of a first order system with permutative conversions was first proved in 1971, and since then several methods to prove that have been studied actively. On the other hand, strong normalization of a second order system with permutative conversions has not been studied so much because of its difficulty, and only proofs are an incomplete proof given in 1971 and a new proof given in 2003. By extending the notion of saturated sets to the second order natural deduction using the idea of atomic disjunction, this research gave a much simpler proof and solved this problem.

(Makoto Tatsuta)

Reference : M. Tatsuta and G. Mints, A Simple Proof of Second Order Strong Normalization with Permutative Conversions, Annals of Pure and Applied Logic, to apper.

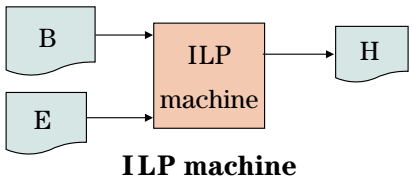
$$\dfrac{A \vee B \quad \overset{[A]}{\overset{\vdots}{C \to D}} \quad \overset{[B]}{\overset{\vdots}{C \to D}}}{\dfrac{C \to D}{D}\,(\vee E) \qquad C}\,(\to E) \quad \to \quad \dfrac{A \vee B \quad \dfrac{\overset{[A]}{\overset{\vdots}{C \to D}} \quad C}{D}\,(\to E) \quad \dfrac{\overset{[B]}{\overset{\vdots}{C \to D}} \quad C}{D}\,(\to E)}{D}\,(\vee E)$$

Permutative Conversions

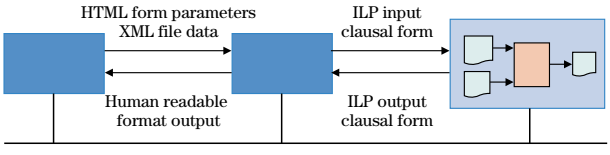
Research on Inductive Logic Programming

Inductive Logic Programming (ILP) is a research area of machine learning, which provides theoretical frameworks and practical algorithms for inductive reasoning in logical forms. Formally, given background knowledge B and an example E, explanatory induction in ILP infers a hypothesis H such that E is logically entailed by H together with B. In this research, we have developed an inductive system in Java language, called CF-induction, which is sound and complete for explanatory induction as well as abduction in first-order logic. By regarding CF-induction as an "ILP machine", application to discovery in biochemistry and extension to a web-based ILP system are currently developed in collaboration with French and British research institutes.

(Katsumi Inoue)



ILP machine



Web-based ILP system

Reference : Inoue, K., Induction as consequence finding, Machine Learning, 55:109-135, 2004.

Other researches

- System development for distance learning (Noriko Arai)
- Machine learning for semantic annotation of Web pages (Nigel Collier)
- Development of Japanese Bio-Portal site (Asao Fujiyama)
- A study on information that ecologically constrains the coordination among speech, gesture and breathing movements within and between individuals (Nobuhiro Furuyama)
- Application of iterative methods to singular linear systems and least squares problems (Ken Hayami)
- Studies on logic with structural expressions for the describing the meaning of information (Ken Kaneiwa)
- Quantum information and computation (Keiji Matsumoto)
- Studies on software evolution for declarative programming (Ken Satoh)
- Constructive logics and computational complexity (Kazushige Terui)
- Efficient and practical fast algorithms for solving large scale problems arising from data mining and genome sciences (Kakeaki Uno)
- Photonic quantum information systems (Yoshihisa Yamamoto)

Infrastructure Systems Research

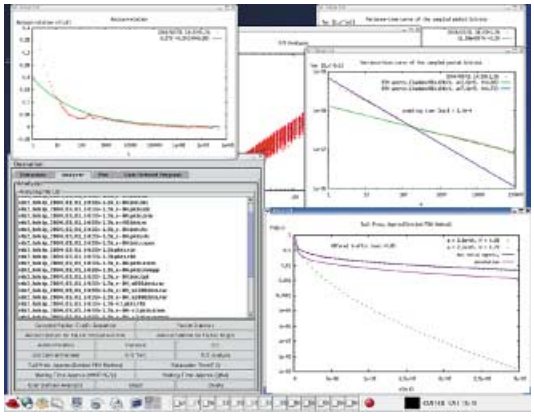
Realize high-performance highly functional networks and computing

Researches on performance analysis based on communication traffic measurement and QoS control method

Internet traffic is characterized as having a self-similar or long-range dependent properties, and these properties are known to affect the quality of service (QoS) of communications due to longer queueing delays and packet loss than in Poisson traffic.

We are now researching QoS evaluation and control methods through analyzing self-similar and long-range dependent properties based on Internet traffic measurement. Up to now, we have developed traffic analysis tool which evaluates packet loss of queueing buffer applying FBM(Fractional Brownian Motion) traffic model. The traffic analysis tool enables network bandwidth provision under required packet loss quality. Furthermore, we plan to study performance evaluation and QoS control methods by Internet traffic measurement for wireless LANs.

(Shunji Abe)



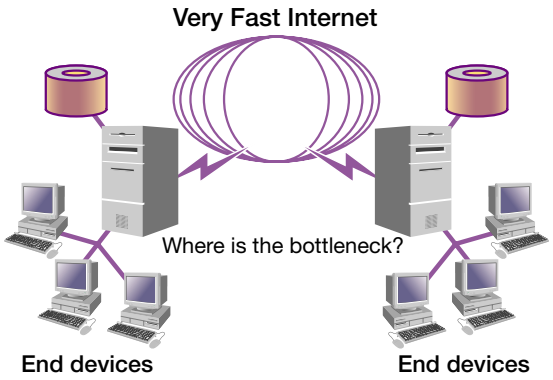
Traffic analysis tool

Reference :
Shunji Abe, Takayuki Fujino, Yusheng Ji, Jun Matsukata, and Shoichiro Asano, "Long-range dependent traffic analysis and approximation method of queue-length probability for an academic information network," Trans, IEICE,Vol.J86-B, No.12, pp.2487-2500, 2003(in Japanese).
Shunji Abe, Toru Hasegawa, and Shoichiro Asano, "Traffic Analysis and Network Bandwidth Provisioning Tools for Academic Information Networks," Progress in Informatics, No.1, 2005.

Network control scheme for very fast Internet

Fast communication over the Internet can be realized only by having all of the following conditions met: the backbone network is fast enough, and every required hardware and/or software condition is met by the end devices such as end users' computers as well as the campus networks which stand between the backbone network and the end devices. However, there has been no handy method with which end users can make their equipment to meet the conditions for fast speed communication. Moreover, even the network managers do not have any established method for locating the bottleneck which prevents the improvement of the communication speed between end devices.

Considering this situation, following researches are conducted: researches on network control schemes for both end devices and the network, e.g. a mechanism to control communication speed according to the congestion of the network, for realizing faster communication aiming at the development of practical methods to improve communication speed in usual or common network environment for end users, and researches on methods for locating the bottleneck which prevents fast communication, as well as for estimating the communication speed according to the degree of network congestion, e.g. a mechanism to propose measures for improving the performance based on the data acquired by performance measurement devices installed around the network.



(Jun Matsukata)

Other researches

- High-level synthesis of asynchronous circuits (Tomohiro Yoneda)
- Integrated control technologies for next-generation all-optical networks (Shoichiro Asano)
- Survival of network operation against natural calamities (Shoichiro Asano)
- Research on ubiquitous computing networks and privacy protection technologies (Shigeki Yamada and Eiji Kamioka)
- Metadata Commerce Network (Noboru Sonehara)
- Research on Quality of Service control in high speed network (Shunji Abe)
- Research on traffic characterization and control for providing the Quality of Service in multi-service networks (Yusheng Ji)
- Research on dependable and scalable operating systems (Takashi Matsumoto)

Software Research

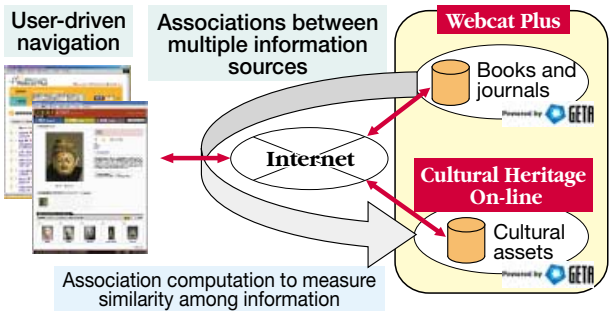
Creating new concepts in software

Scalable Association Engine for Associative Information Access

The only techniques available at present for navigating us through large volumes of data to identify meaningful information are conventional metadata search or full-text search. It is difficult for us to get insightful clues to our immediate tasks or useful suggestions for extending our beliefs or thinking. We tackle to this problem from a point of view so-called "Informatics of Association".

The key information technology for stimulating human creativity involves finding new ways to link associative memory searching and unconscious recollection in our brain with the processes of searching, analysing and visualizing relevant information in the cyber space. Our thinking is developed by the information (or knowledge) stored in the brain. Thus, reinforcing the associative power of the brain is the best way to encourage mutual interaction between creative human processes and the vast amounts of external information.

We have developed a multi-purpose association engine called GETA (Generic Engine for Transposable Association),



Associative information access based on large-scale association

which can be applicable to large scale DB's as large as 10 million items. Associative information access system based on GETA engine will be capable to measure similarity among information and establish content based associations between different information sources.

(Akihiko Takano)

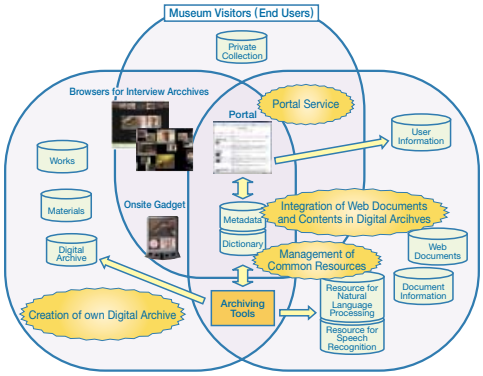
Reference : A. Takano, Association Computation for Information Access, Discovery Science, 6th International Conference, LNCS Vol. 2843, pp. 33-44, Springer-Verlag, 2003.

The Mono project — from preservation of artistic knowledge to utilization — Research into multimedia archiving of artistic expression and development of archiving system

The Mono project explores the concept of archiving artistic expression as a means of sharing and preserving the innate knowledge of artists and ideas-people that would otherwise be lost. The project examines the methodology of the development and deployment of archiving systems predicated on high-quality and wide-ranging information pertaining to handicrafts and artistic works.

The aim is to create archiving systems capable of complementing high-quality visual information about artistic works — normally in the form of still and/or video images — with detailed qualitative information about the creation process, such as background information and descriptive information on methodologies. In this way, the archive will provide a true repository of all facets of artistic expression.

The content in this project primarily involves conversational videos, generally based on interviews. The focus is therefore on developing methodologies for the collection of interview footage and transfer into archival format, as well as the design of a platform for this purpose. These tasks are divided into the following broad themes:



- Assisting museums and galleries in the collection and archiving of interview footage by developing procedural manuals and associated support tools
- Developing dictionaries of specialist terminology concerning the use of internet information resources in conjunction with archiving
- Providing end-user support in the form of comprehensive lifelong learning packages incorporating both on-site information at museums and galleries and on-line information over the internet

The ultimate aim is to bring together the above themes in a flexible portal-based structure.

http://research.nii.ac.jp/mono/

(Kenro Aihara)

Reference : Kenro Aihara and Atsuhiro Takatsu: A Reciprocal Platform for Archiving Interview Videos about Arts and crafts, Joint Conference on Digital Libraries 2005 (JCDL 2005), Denver, USA, to appear (2005)

Other researches

- Software platform for smart and federated distributed processing (Katsumi Maruyama, Kazuya Kodama, Soichiro Hidaka, Hiromichi Hashizume, Yusheng Ji)
- Software development and testing environment for mobile terminals (Ichiro Sato)
- Document stream analysis and data mining (Atsuhiro Takasu)
- Constraint programming for visual interfaces (Hiroshi Hosobe)
- Software verification based on model checking (Shin Nakajima)
- Optimization of XML query language processing systems (Soichiro Hidaka, Hiroyuki Katoh)
- Component-based software development environment (Hironobu Washizaki)

Research on Multimedia Information

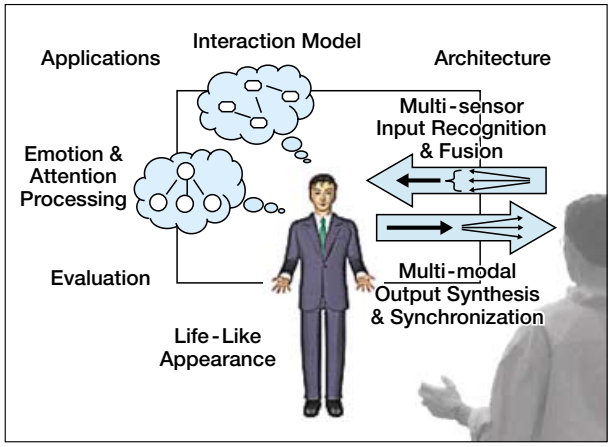
The relations of human and multimedia information

Life-Like Character Based Interfaces and Affective Computing

Life-like character based interfaces are computer interfaces that emulate aspects of human face-to-face communication by using anthropomorphic virtual agents. Those agents do not only display multi-modal behavior in the form of speech, facial expressions, and gestures, but they may also perceive, and to a limited extent, understand the user. A salient feature of character-based interfaces is that they support affective communication with users, by expressing emotion verbally and non-verbally, and also recognizing the emotional state of the user.

I am engaged in the design, authoring, and evaluation of life-like character based interfaces, as well as in research on affective computing, the modeling and processing of physiological user data, specifically bio-signals to recognize affective states and eye movements to track users' focus of attention and interest. My broader vision is to realize multi-modal interaction in ambient (ubiquitous, smart) environments.

(Helmut Prendinger)



Life-Like Character

Reference : Helmut Prendinger and Mitsuru Ishizuka (Eds.), Life-Like Characters. Tools, Affective Functions, and Applications, Cognitive Technologies Series, Springer, Berlin Heidelberg, 2004

Information Processing for the Digital Archive of Rare Books

We proposed an image processing method called "digital bleaching" for improving the readability of text on digital images. This method was developed for reducing the risk of uncontrolled reproduction in open digital archives. This method seeks a good balance between image fidelity and text utility, and tries to transform the paper area of the image into uniform white background through removing irrelevant information for text readability -- such as color information, spots and stains of aged papers, and subtle shades generated by the image acquisition processes. The right figures show the results of digital bleaching compared to that of normal decolorization.

Result of normal decolorization

Result of digital bleaching

Another product we developed is "Multilingual-term Accumulation Support System" (MASS) for assisting the creation of a dictionary that contrasts multilingual technical terms. This system is designed for the collaborative work of experts specialized in multiple domains, and the dictionary made with this system is used for full-text multilingual search of our digital archive Web site.

(Asanobu Kitamoto)

Reference : Kitamoto, A., Yamamoto, T., Sato, S. Collier, N., Kawazoe, A., Ono, K., Text Readability and Coreference Annotation across Heterogeneous Media for the Digital Archive of Rare Books, The Journal of the Institute of Image Electronics Engineers of Japan, Vol. 33, No. 5, pp. 737-745 (2004)

Other researches

- The construction of large-scale video archives and the understanding and retrieval of video contents (Shin'ichi Satoh, Norio Katayama, Hiroshi Mo)
- Human interface and augmented reality (Hiromichi Hashizume)
- Similarity-based retrieval system for three-dimensional models (Hironobu Gotoda)
- Technology for using electronic contents (Jun Adachi, Hiroyuki Kato)
- The structure of multi-dimensional image information (Kazuya Kodama)

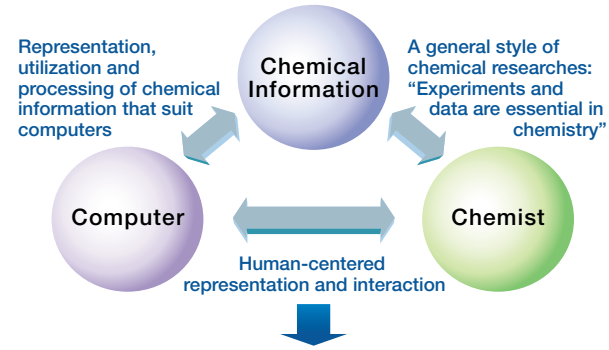
Research on Intelligent Systems

Building systems that support knowledge-based human activities

Chemoinformatics Research

Chemistry is said to be an "empirical science". Looking back over the history of the discipline, you can realize that chemistry has been developed by repeated cycles of the accumulation of experiments and the construction of rules and theories. The rules and theories are constructed by the integrating of experimental facts, knowledge and experiences with chemists' insights and intuitions. Additional experiments that verify the rules and theories as well as new phenomena that are not according to them have been found and accumulated as novel information. We have focused on the significance of chemical information in the development of chemistry and in our chemoinformatics research aim at the development of new methodologies and approaches in practical chemical researches by utilizing computers. Concretely, introducing of new chemical informational representations that suite human and a computer, respectively, and the development of intelligent systems that support chemists to solve practical problems in chemical researches are in progress, including molecular representation with stereochemical information, chemical reaction representation based on physicochemical factors controlling reactions, their visualization introducing human-computer interaction technologies, and intelligent systems for chemical reaction prediction and NMR (Nuclear Magnetic Resonance) chemical shift prediction.

(Hiroko Satoh)

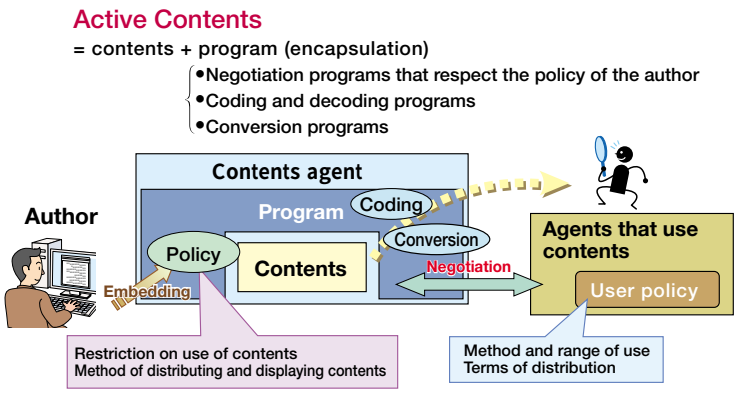


Reference : Hiroko Satoh, "Kagaku-jyouhougaku" Maruzen, March 2003 (In Japanese)

Active contents for the flexible distribution of contents

In the network society of some years hence, it will be possible for anyone to transmit contents from anywhere. Technology to facilitate the flexible and safe distribution of contents without violating the intentions either of the provider or of the user will become important. In this research, we are looking for ways of using agent technology to encapsulate contents based on the intentions of creator, provider and user as policy. thus making it possible to distribute contents flexibly and safely. To this end, we are developing policy technology that upholds the intentions, frameworks for distributing encapsulated contents, and so on. Specifically, we are trying to make it possible to encapsulate contents based on the policy of methods of restricting use, distributing and utilizing contents, methods of collaboration between contents and their users as well as between contents themselves, and so on.

(Shinichi Honiden)



Reference : Yasuyuki Tahara, Nobukazu Yoshioka, and Shinichi Honiden: "A Formal Model of Active Contents Based on the Ambient Calculus", Proc. of MATA'03, LNCS 2881, Springer-Verlag, 2003.

Other researches

- Research on the analysis and use of "text" (Akiko Aizawa)
- Symbiotic robotics research toward co-existence of humans with robots(Haruki Ueno)
- Mutual adaptation between humans and agents (Seiji Yamada)
- Research on intelligent systems for solving practical problems in chemistry (Hiroko Satoh)
- Understanding human intention and activities for versatile real-time human-machine-interactions (Akihiro Sugimoto)

Research on Human and Social Information

Study the relationship between people and information in society

Research on construction of a network-related legal information portal

An information network poses a number of new legal problems everyday. However, it's not easy to understand network-related laws correctly and to comply with the latest in network regulations. Therefore, we intend to construct a legal information portal site that integrates information about these network-related laws.

This portal will present advices from network specialists and lawyers on popular topics, including information security issues, to help network users understand the important points within these topics. In addition to these advices, this site will offer links to related judicial precedents and useful legal sites.

Also, we intend to develop a web forum where network specialists can safely discuss solutions to unsolved legal issues for those who are likely to encounter, or are involved in, such issues (university network administrators, for example). This forum will be in a secure, access-controlled web-log format using a reverse proxy.

With this combination of services, the network legal information portal will support the construction of, and compliance with network policy and guidelines at universities and other institutes.

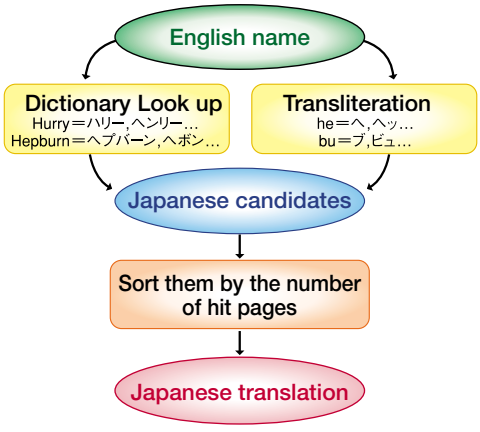
(Hitoshi Okada)

Reference : Yoh'ichi Tohkura, et.al., information Security and Legal Systems, Maruzen (2005)

Construction of Web-based Reference Tools for Translators

Recent years have seen an increase in the number of professional and amateur translators that translate web information on a voluntary basis. We develop support tools for these translators, contributing to the widening of information channels in society. With some exceptions, most of the time required for human translation is consumed finding corresponding expressions in the target language. This is different from machine translation, which takes time in determining corresponding meanings. The expressions which are difficult to find translations are proper nouns, idiomatic phrases, terminology, and expressions comprised of simple words whose corresponding expressions are absent in the target language. We have constructed a translator support tool that expands on so-called "closed resources" – i.e., dictionaries – to apply "open resources" – web texts – as well. The figure shows a representation of the process involved in determining proper noun translations using the support tool. To determine a translation for an English name, this tool finds the target words in dictionaries and the transliterated katakana words, searches for them with a search engine, and then shows the Japanese words whose number of hit pages are high as proper translations. The present technological challenge lies in transliterating non-English-origined names.

(Keita Tsuji, Kyo Kageura)



Flow of translation of English names
The number of hit pages is used as the measure for the appropriateness of translation.

Reference : Keita Tsuji and Kyo Kageura (2004) "Web-based Japanese-English Name Translation System as Reference Tool," *Proceedings of the 52nd Conference of Japan Society of Library and Information Science,* p.45-48.

Other researches

- Knowledge representation and use (Teuo Koyama)
- Federating databases of researchers' information and the web (Keizo Oyama)
- Evaluation of information access technologies (Noriko Kando)
- The dynamics of terminology (Kyo Kageura)
- Building a Weblog Site for Online Law Information (Hitoshi Okada)
- Research on user-adaptive information access methods (Koji Eguchi)
- Identifying the Newly-coined Words which are to be Important in Special Domain (Keita Tsuji)
- Legal, institutional and policy research concerning access to government information (Takashi Koga)

Research Information Research

Study the structure of information in scientific research

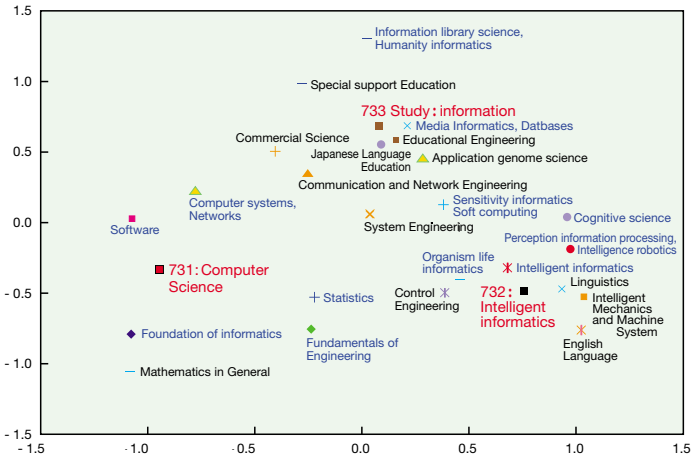
Investigation study on network structure of information sciences related research and its trends

Interdisciplinary research between wide fields is requierd to solve complex problem of the contemporary society. Moreover, it is seen a lot of case that the research field classification of the old model doesn't fit to a modern research system. In the Grants-in-Aid for Scientific Research, the movement of the field reorganization including the introduction of the Interdisciplinary and New area field has already been seen. It is thought that the more appropriate reorganization of the field classification can be established by investigating the relation of the academic activity in the various data bases etc. It aims at the systematization of informatics by measuring the similarity between fields of the researcher's activity related to information science.

(Msaki Nishizawa, Yuan Sun)

Reference : Masaki Nishizawa, Yuan Sun, "Research Fields related to Information Science under a new classification in Japan", Proceedings on 4th Inernational Conference on University Evaluation and Research Evaluation, pp67-73, Whan University, China, (2004)

Positioning of the new 26 detail field items to the old information science of 3 fields by the correspondence analysis



Research on identification of creativity in research activities

As the shift from national universities to educational corporation bodies, further improvement of their research function has been more important task.

Selecting about 40 universities which research power is supposed to be high, I analyzed relation between number of awards of the grants from NII Grants-in-Aid for Scientific Research database (1998-2002) and number of papers from the U.S. ISI database (1981-1999) in every university.

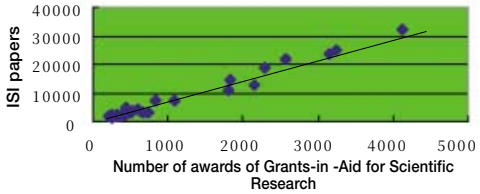
Correlation between them is quite strong in the fields of science and engineering, and a little strong in the fields of biology and medicine. Although the correlation was hardly found in the fields of humanities and social sciences, the correlation in case of including psychology becomes clearly shown and universities are divided into some groups.

I will continue from various viewpoints to advance the research on identification of creativity in research activities.

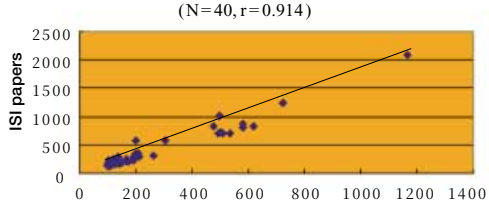
(Morio Shibayama)

Reference : Morio Shibayama, "Analysis of universities' research activities based on the number of awards of *Grants-in-Aid-for-Scientific Research* : focused on humanities and social sciences", the summary of 7th conference of Japan Association of Higher Education Research, pp.30-31, 2004.

Relation between grants and ISI papers in fields of Sciences and Engineering (N=41, r=0.846)



Relation between grants and ISI papers in fields of Humanities and Social Sciences (includind Psychology) (N=40, r=0.914)



Other researches

- Empirical analyses on the role of Grants-in-Aid for Scientific Research for promotion of basic research. (Masamitsu Negishi, Morio Shibayama, Masaki Nishizawa, Yuan Sun)
- Empirical Study on a Triple Helix of University-Industry-Government Relations (Yuan Sun, Masamitsu Negishi, Masaki Nishizawa, Akira Miyazawa)
- Research on the industry-university cooperation by patent application (Morio Shibayama)

Current Research Topics of Research Staff of NII

Foundations of Informatics Research Division

Noriko Arai	• Designing Collaborative Learning Environment • Knowledge Sharing, Distance Learning • Mathematical Logic
Katsumi Inoue	• Consequence finding and theory formation • Induction and abduction • Dynamics of knowledge and belief
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, logitics, and vehicle routing problems
Ken Kaneiwa	• Ontology-oriented logical reasoning systems • Logical languages with structural expressions for describing the meaning of information
Nigel Collier	• Machine learning for semantic annotation of Web pages • Information extraction • Ontology engineering • Text mining for biology
Ken Satoh	• Construction of multiagent systems with speculative computation • Software evolution for declarative programming
Hideaki Sugawara	• Exploration of interoperability and knowledge dicovery in ciological information resources
Makoto Tatsuta	• Type theory for classical logic • Strong normalization of permutative conversions
Yuzuru Tanaka	• Knowledge media technologies for the extraction and federation of knowledge resources over the Web
Kazushige Terui	• Studies on Linear Logic, Type Theory and Computational Complexity
Ken Hayami	• Numerical analysis: The application of GMRES (Generalized Minimal RESidual) method to singular systems and least squares problems • The numerical solution of systems of algebraic equations arising in a MEG (MagnetoEnthelophaloGraphy) inverse problem
Nobuhiro Furuyama	• Motor Coordination in Communication
Peter van Loock	• Quantum information, quantum optics • Quantum networks, quantum solitons • Linear optics quantum information processing
Keiji Matsumoto	• Quantum information and computation
Mio Murao	• Quantum information processing using entanglement
Yoshihisa Yamamoto	• Photonic quantum information systems • Solid state NMR quantum computation

Infrastructure Systems Research Division

Shoichiro Asano	• Integrated control technologies for next-generation all-optical networks • Survival of network operation against natural calamities
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
Asanobu Kitamoto	• Data Mining from Large-Scale Scientific Databases • Meteoinformatics • Digital Archives
Michihiro Koibuchi	• High-performance interconnection networks in multiprocessor systems • Networks-on-Chips architecture • Interconnects using Ethernet in PC clusters
Noboru Sonehara	• Digital Content Commerce (d-Commerce) System • Intellectual Property Rights Securization System • Reward-based Peer-to-Peer Content Distribution
Kae Nemoto	• Quantum information/computation • Quantum information processing in optics • Quantum manipulation and quantum metrology
Toru Hasegawa	• Measurement method of Internet and security performances • Architecture and protocols for next generation all IP networks
Soichiro Hidaka	• Optimization of XML query language • Parallel processing environments for non-numeric applications • Extensible and distributed operating systems
Jun Matsukata	• Network control scheme for very fast Internet
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
Shigeki Yamada	• Research on context-aware and mobile computing networks • Research on privacy protection technologies
Tomohiro Yoneda	• High-Level Synthesis of Asynchronous Circuits • Mapping of Asynchronous Circuits to FPGA • Formal Verification of Real-Time Software
Susumu Yoneda	• Service Management System • Peer to Peer Application for Security
Youdai Watanabe	• Relation among security notions in cryptography • Security of quantum key distribution schemes • Performance of probabilistic inference algorithms on graphical models

Current Research Topics of Research Staff of NII

Software Research Division

Kenro Aihara	• Multimedia Archive for Creative Activities of Arts and Crafts • Computer Supported Lifelong Learning about Arts and Crafts
Jun Adachi	• Information retrieval and integration of heterogeneous data, particular, Web contents • Modeling and implementation of high-performance information retrieval systems • Text mining
Frederic Andres	• multilingual semantic management for image learning ontology • Geomedia Database Management • Collaborative monitoring control of Cultural heritage on the internet
Kazuhiko Kato	• Autonomous federated systems • Secure computing
Hiroyuki Kato	• Optimization for casual queries to database • Fundamental issues on optimizing queries to XML databases
Noriko Kando	• Evaluation of Information Access Technologies • Text Structure and Genre Analysis • Multi-Faceted Metadata and Search User Interface • Cross-Lingual Information Retrieval
Yusheng Ji	• Research on quality of service provisioning in multi-service networks • Research on characterization and control of multimedia traffic • Research on resource management in distributed systems
Ichiro Satoh	• Middleware for ubiquitous and mobile computing, distributed objects, mobile agents
Akihiko Takano	• Research on parallel association computation based on algebra of association • Interactive methods in information space based on association • Scientific method for software construction using program transformation
Shigeru Chiba	• Aspect-oriented Software Development • Dependable Computing
Shin Nakajima	• Formal Specification and Verification of Software (Application to Web Service and Embedded Systems)
Satoshi Matsuoka	• High-performance Middleware for Grid Systems, Low Power Parallel Machines, and Dependable Clusters
Katsumi Maruyama	• Research on an extensible distributed operating system • Research on a wide-area cooperative system
Hiroshi Mo	• A study on case based video indexing • A study on intelligent video structuring

Multimedia Information Research Division

Norio Katayama	• Research on multimedia information retrieval • Research on large-scale video archive systems
Makoto Kanazawa	• Lambda calculus and formal grammar • Logical semantics of natural language
Toshiro Kamiuchi	• Digital Silk Roads Projects • Research and development on data base by advanced technology • Personal training for digital archives
Eiji Kamioka	• Study on Ubiquitous Computing Networks • Study on Context-Aware Information Networks • Study on Seamless Service Mobility in PAN Environments
Imari Sato	• Image-based modeling for digital contents creation • Digital Assistance for daily activities
Shin'ichi Satoh	• A study on video analysis, retrieval, and knowledge discovery based on broadcast video archives • A study on image retrieval
Yuichi Nakamura	• automated video capturing and editing for multimedia production • multimedia analysis based on the integration of video, audio, and language analysis • image recognition and understanding
Hiromichi Hashizume	• Human interface with computer augmented reality • Collaboration support system
Helmut Prendinger	• Life-like characters • Multimedia/multi-modal presentation systems • Physiologically interactive systems

Intelligent Systems Research Division

Ryutaro Ichise	• Machine learning • Knowledge sharing • Data mining
Haruki Ueno	• Symbiotic robotics towards coexisting of human-beings and robots • Development of e-Learning environment for higher education • Research on engineering ethics based on traditional culture
Hiroko Satoh	• Computer-assisted chemical reaction prediction study • Computer-assisted NMR chemical shift prediction study
Yoshiaki Shirai	• Recognition of gestures by image sequence
Akihiro Sugimoto	• Understanding Human Intention and Activities for Versatile Real-Time Human-Machine Interaction • Recognition of Hand-Held Object by Wearable Vision Sensor • Computer Vision under the Existence of Digitization Errors
Shinichi Honiden	• Agent oriented software engineering • Agent Architecture • Advanced Application of Agent
Tomoko Matsui	• Speech and Speaker Recognition • Statistical Pattern Recognition
Seiji Yamada	• Human-Agent Interaction • Interactive Information Gathering/Retrieval

Human and Social Information Research Division

Kouichirou Ueki	• Development of the next generation human interface
Koji Eguchi	• Research on adaptive information access methods • Research on evaluation models for Web search systems • Research on organizing methods for unstructured text data
Keizo Oyama	• Research on techniques for utilizing web information • Research on an integrated platform for scholarly information services • Research on full text search technology
Hitoshi Okada	• A Cross-Country Comparative Study on the Critical Growth Factors of Electronic Commerce • Building a Weblog Portal Site for Online Law Information
Kyo Kageura	• Research on Multilingual System for Aiding Translators • Research on the Relationships between Media Structure and Information Management
Hironobu Gotoda	• Similarity search for 3D models • Visualizing citation links among research papers
Teruo Koyama	• Term extraction from text corpora • Structurization of terms • Structural analysis of terms • Knowledge representation and use
Keita Tsuji	• Identifying the Newly-coined Words which are to be Important in Special Domain • Developing a System for Translating Proper Names based on Transliteration
Yoh'ichi Tohkura	• Relationships between ICT (Information and Communication Technology) and Humans • Science and Technology for the Society • Transdisciplinary study on human information processing
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
Akira Miyazawa	• Union catalogue database construction and usage • Link of NACSIS-CAT database and Chinese traditional book catalogue database • Character codes as a fundamental tool for database representation • D : Data processing utilities

Research Information Research Division

Hajime Kitaoka	• Research on the relationship between customers and producers in intelligence production • Research on the mechanism for intelligence requirment creation • Policy studies on intelligence community unification and reinforcement
Morio Shibayama	• Metrical analysis of research trends and research evaluation • Statistical study on change of reaserch 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
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
Asao Fujiyama	• Comparative genomics research

Research Center for Testbeds and Prototyping

Henri Angelino	• International comparison of Engineering Education, Innovation Policy, Transfer of Technology and University-Industry relations
Masashi Inoue	• Multi-source learning • Cross-media information retrieval • Communication understanding
Shigeo Urushidani	• Research on IP optical backbone network architecture • Research on next-generation system architecture
Ikki Ohmukai	• Personal Communication and Interaction in Semantic Web Environment • Information Sharing and Distribution Based on Personal Network
Hisamichi Okamura	• Research on information network, law system, law information, information ethics, and protection laws of personal information
Kazuya Kodama	• A study on structure of multi-dimensional image information and communication systems of distributed shared image environment with real-time quality control
Atsuhiro Takasu	• Learnable approximate string matching model • Non-linear time series document analysis • Distributed index processing
Hideaki Takeda	• knowledge sharing system • Community support system • Design theory
Shun Tsuchiya	• Research on methods and applications of structured documents in XML • Development of basic techniques for storage and preservation of scientific and scholarly information and analysis of their institutional aspects • Emprical analysis of human spoken dialog and development of component technology for machine spoken dialog system based on the analysis
Jun Fujioka	• Public-Key Cryptosystems • Digital Signatures • Cryptographic Protocols
Hiroshi Hosobe	• Constraint programming for graphical interfaces • Theory and solution of soft constraints
Yasuhiro Yasuda	• Image coding • Contents Delivery Network • Adhoc Network • Haptic Collaboration in Shared Virtual Environments
Hironori Washizaki	• Component-based Software Development • Pattern-oriented Software Development • Software Metrics

Research Center for Information Resources

Akiko Aizawa	• Analysis and retrieval of textual data using statistical methods • Identification and linkage of text information • Automatic construction of linguistic resources
Kazuaki Kishida	• Theory and technique of text retrieval • Methodology for retrieval experiments • Document clustering and text categorization
Takashi Koga	• Legal, institutional and policy research concerning access to government information
Michael E. Houle	• Data mining (search, clustering, classification) • Design and analysis of algorithms, visualization, combinatorial geometry
Hayato Yamana	• Web Information Retrieval • Datamining and Web Community Extraction • Parallel and Distributed Computing
Keiko Watanabe	• Research on the impact of e-Learning on existing educational system • Educational administration and finance

Research Center for Testbeds and Prototyping

Promotion of information infrastructure development services
and empirical research that can benefit society

Mission of Research Center for Testbeds and Prototyping

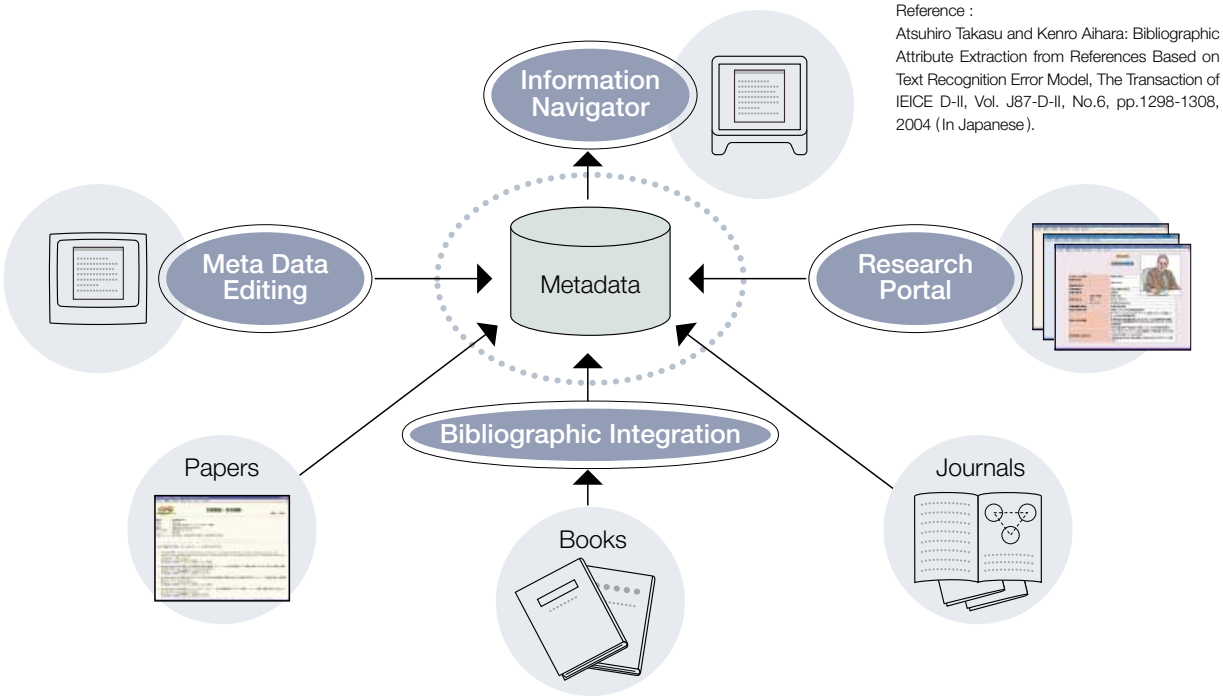
Purpose

The Research Center for Testbeds and Prototyping (RCTP) provides test beds (large scale experimental environment for computer systems) for researchers in universities, research institutes and companies and promotes needs-oriented research projects. Through this facility, RCTP contributes to development of an advanced scholarly information infrastructure.

Research Project on "Integrated Platform for Digital Contents"

NII has compiled various kinds of scholarly databases and started a new service named Global Environment for Networked Intellectual Information (GeNii) that provides integrated access to these databases for users. An efficient database integration technique and effective information access to the integrated databases are required to enrich the contents of GeNii and improve the accessibility of GeNii. This project aims at developing techniques supporting GeNii. Currently the following projects are on going.

- **Information Extraction and Matching for Bibliographic Databases**
  This study aims at developing techniques to extract bibliographic components and linking records in large scale databases. The result is applied to the integration of scholarly databases in GeNii
- **Editing and Formatting of Researchers' Personal Data**
  This study aims at developing a system for each researcher to edit and to manage his/her own information and for exchanging data with various systems and transforming to desired formats, using techniques of XML and Web services.
- **Data Mining and Visualization of Scholarly Databases**
  This study aims at developing data mining methods for scholarly databases and contributing effective visualization of them that provide a new access method to the integrated databases.



Reference :
Atsuhiro Takasu and Kenro Aihara: Bibliographic Attribute Extraction from References Based on Text Recognition Error Model, The Transaction of IEICE D-II, Vol. J87-D-II, No.6, pp.1298-1308, 2004 (In Japanese).

Other Projects

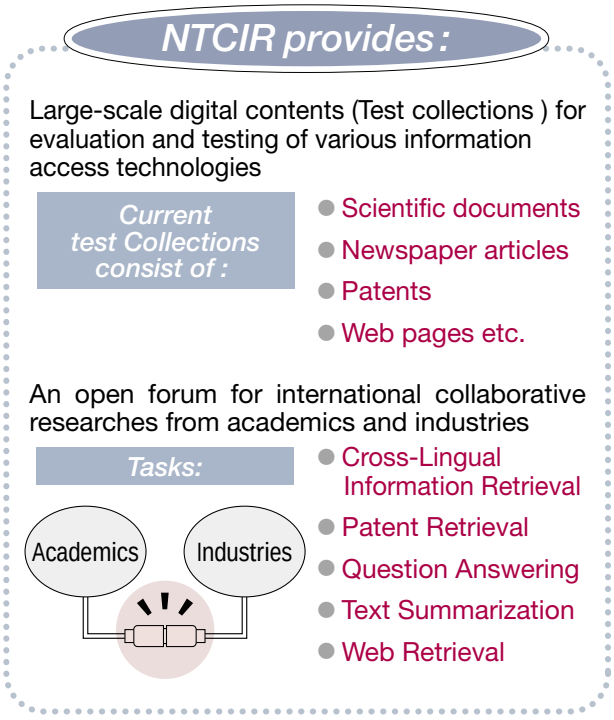
- A Privacy Protection Technology (EMAPP) for Ubiquitous Environments
- Infrastructure for Intelligent Image Sensor Network
- Soft and Continuous Constraint Programming
- Utilizing Software Patterns in the Network Era
- Mismatch Resolution Model between Queries and Documents

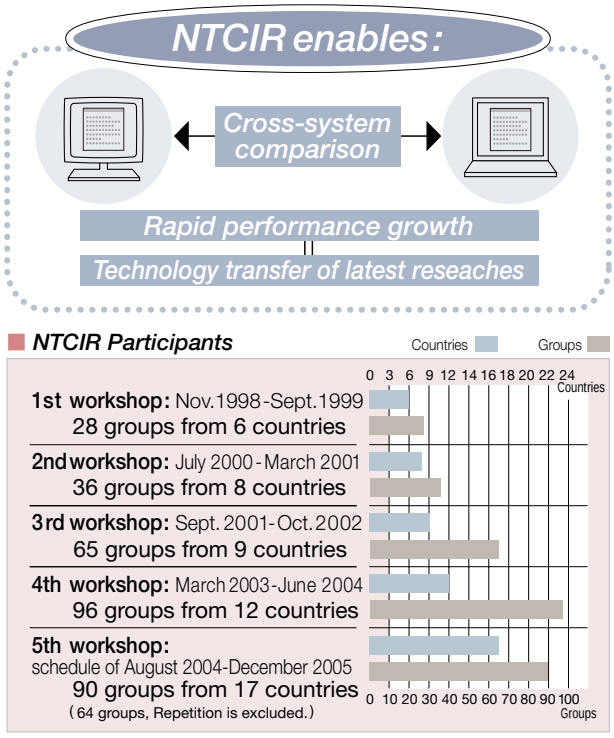
Research Center for Information Resources

Resources for informatics research

Center's Mission and NTCIR

The Research Center for Information Resources (RCIR), a research facility within NII, promotes collaborative research that uses a large amount of information resources.
One of the most important and largest projects now is NTCIR.
The NTCIR (NII Test Collection for IR Systems) workshop is a series of projects where cutting-edge information access technologies are evaluated through collaborative researches with many participants from academics and industries, domestic and abroad. In this workshop, large-scale digital contents (test collections) are utilized commonly by participating research groups for performance evaluation of various technologies such as information retrieval, text summarization, information extraction, and question-answering.
NII organizes this workshop series, develops test collections, and provides them for the research community. It also plans to expand this project in other kinds of contents.





Other Projects at RCIR

Multimedia Archive for Creative Activities of Arts and Crafts
This project, collaboration with some domestic universities including Tokyo Nat. Univ. of Fine Arts and Mucis, aims to support inheritance or share of irreplaceable knowledge of intellectuals, such as artists or professionals. The project focuses on research issues related to developing and utilizing multimedia archives.
The archive includes not only secondary information or images but also interview videos with such intellectuals.

Video Media Intensive Analysis Project
This project aims at the intensive promotion of video analysis research by distributing video contents for research and evaluation purpose. The video contents, equipped with metadata, are the outcome of the joint development with the technical group Pattern Recognition and Media Understanding (PRMU) of the Institute of Electronics, Information and Communication Engineers (IEICE).

Construction and Evaluation of Lexically-motivated Corpus
This project aims at constructing a Japanese language corpus with morphological units properly decomposed. It is to be used for such studies of compound analysis, of term formation, and of lexicology, etc. In cooperation with various universities and companies, the preliminary corpus was used for evaluating the performance of automatic term extraction methods, the result of which was published in the special issue of "Terminology" (Vol. 6, No. 2).

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.

(1) Participation in the Graduate University for Advanced Studies
(2) Special collaboration with research students
(3) Cooperation with graduate universities

Department of Informatics, The Graduate University for Advanced Studies

Establishment of the Department

NII joined the Graduate University for Advanced Studies (Sokendai, in Japanese) in April 2002, and established the Department of Informatics and its Ph.D. Programs. Sokendai is a graduate university composed of 22 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 four research areas, and offers a total of 55 subjects.
· Foundations and Infrastructure Science
· Software Science
· Intelligent Systems Science
· Information Environment Science

International graduate course

The international graduate course was established in October 2002 with the aim of providing education within an international atmosphere for talented applicants (primarily from Asian countries) to foster highly creative researchers with a broad international outlook who can meet the new challenges of scientific research. All lectures are conducted in English on this course.

In the classroom at the NII

Student study room at the NII

Enrollment (as of February 2005)

( ) Foreign students among total

Year of Admission (Fiscal Year)		General Course	International Course	Total
FY 2002	April	7 (0)	—	12 (4)
	October	1 (0)	4 (4)	
FY 2003	April	15 (6)	—	22 (11)
	October	3 (1)	4 (4)	
FY 2004	April	6 (3)	—	15 (5)
	October	7 (0)	2 (2)	
FY 2005	April	7 (2)	—	7 (2)
Total		46 (12)	10 (10)	56 (22)

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

Japan	· Hokkaido University · Ibaraki University · University of Tsukuba · University of Library and Information Science · The University of Tokyo · The University of Electro-Communications · Yokohama National University · Shizuoka University · Mie University · Kyoto University · Osaka University · Kobe University · Nara Women's College · Hiroshima University · Kyushu University · The University of Aizu · Keio University · Shibaura Institute of Technology · Seijo University · Tokai University · Tokyo Denki University · Tokyo University of Science · Nihon University · Waseda University · Doshisha University · The University of the Air
China	· East China Normal University · Harbin Institute of Technology · Tsinghua University · University of Science and Technology of China
Thailand	· Kasetsart University
South Korea	· Seoul National University
Iran	· Amir Kabir University of Technology · Tehran University
Viet Nam	· University of Natural Science
Bangladesh	· Dhaka University
France	· Institut des Sciences et Techniques de l'Ingénieur d'Angers · l'Institut National des Télécommunications · Université de Savoie
Germany	· University of Leipzig · University of Stuttgart
USA	· Yale University
Other	· Asian Institute of Technology

Sparial Collaboration with Research Students

NII accepts students from other universities as research students in special collaborative projects, fostering both research and education. 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 2005)

University / Graduate School
The University of Tokyo / · Graduate School of Interdisciplinary Information StudiesInterfaculty Initiative in Information Studies · Graduate School of Science
Tokyo University of Agriculture and Technology / IInstitute of Symbiotic Science and Technology
Tokyo Institute of Technology / Interdisciplinary Graduate School of Science and Engineering
The University of Electro-Communications / Graduate School of Information Systems
Japan Advanced Institute of Science and Technology / School of Knowledge Science
Keio University / Graduate School of Science and Engineering
University College London / The Institute of Archaeology

Cooperation with Graduate Universities

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

Cooperative graduate universities

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 ~

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 February 2005)

Master Course	Ph.D. Course	Total
19	18	37

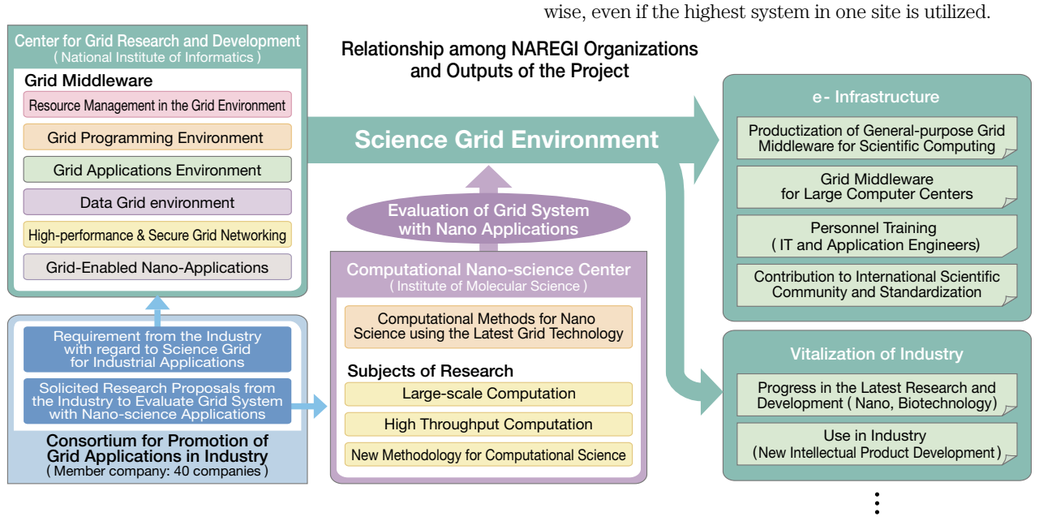
Contact : Research Cooperation Division, Graduate School Section
TEL : 03-4212-2110 FAX : 03-4212-2120 E-mail : daigakuin@nii.ac.jp

National Research Grid Initiatives (NAREGI)

http://www.naregi.org/

Objectives of NAREGI Project

NAREGI (National Research Grid Initiative) is one of the major Japanese national IT projects currently being conducted. NAREGI will cover the period of FY2003-2007, and collaboration among industry, academia, and the government will play a key role in its success. The main objective of the project is to develop the scalable grid infrastructure software that will be robust enough for actual operation of the widely distributed and large-scale computing environment for scientific research. Accordingly, NII is carrying out research and development with regard to the grid infrastructure middleware (the " e-infrastructure"), the establishment of a secure network environment suitable for the grid, grid-ready nano-applications, and more. Furthermore, to verify that the grid infrastructure software developed by NII is useful for the scientific and technical computing , large-scale simulation is to be applied to advanced nano-field research and development, the type of computations that would be impossible to conduct otherwise, even if the highest system in one site is utilized.



Research Themes

Resource management in the grid environment (WP1)

Theme ● Super Scheduler ● Grid VM ● Distributed Information Services

Research subjects

NII is currently conducting research and development of the Super Scheduler, which administers all the scheduling operations in the grid, including the "resource broker" functions, which takes into account the requests from users, such as the number of CPUs, degree of urgency, cost, etc. Further, efforts are also focused on securing computer resources through Grid VM (Virtual Machine), which carries out resource control, resource protection, and scheduling at the local level of the computer resources, as well as through the Distributed Information Service, which is used for management and assessment of computer resources, networks, software, users, etc. within the grid.

Grid programming environment (WP2)

Theme ● Grid RPC system ● Grid MPI system

Research subjects

As for Grid RPC, the NAREGI project has been developing a system enabling easy development and high execution efficiency within the grid application software, with several clusters of a few dozen to hundreds of CPUs; this system is based on a model which allows the library functions to be called from a remote computer. As for Grid MPI, NAREGI is carrying out research and development on TCP/IP-level or MPI-level communication libraries to realize high-performance, interoperable communication, with takes into account the variable communication delay on the network. Both of these projects are expected to contribute to international standardization through the Global Grid Forum.

Grid applications environment (WP3)

Theme ● Grid Workflow ● Grid PSE ● Grid Visualization System

Research subjects

In order for the grid to be widely accepted by end users, the grid applications environment should be easy to use. To this end, NAREGI is conducting research and development of a Grid Workflow and Grid PSE (Problem Solving Environment). Grid Workflow is meant for easy control of job flow in Grid programming, either in terms of user friendly GUIs or in terms of the comprehensible external interface to the script languages. The research on PSE aims at the development of an application development and execution environment that includes the deployment and registration of application software within the grid environment, which were developed by researchers. Further efforts are focused on the execution and coordination of, and collaboration among, distributed application software, computational modules, data, etc. Finally, research and development is underway on the Grid Visualization software tool, which visualizes the results of computations.

Data Grid environment (WP4)

Theme ● Data Grid fundamental technology ● Search control technology for database federation ● Metadata-based information integration for heterogeneous data resources.

Research subjects

Technologies are under research and development for the federation of numerous databases spread throughout the Internet on the grid environment. The technologies include the Data Grid fundamental technology for managing and querying data resources using the WSRF-based OGSA infrastructure, search control technology (preventing combinatorial explosion caused by searching across many databases) and information integration technology with metadata that mediates heterogeneous data resources. Their developments are carried out in cooperation with the other grid environment.

High-Performance & Secure Grid Networking (WP5)

Theme ● Research and development of network communication infrastructure ● Research and development of security authentication infrastructure

Research subjects

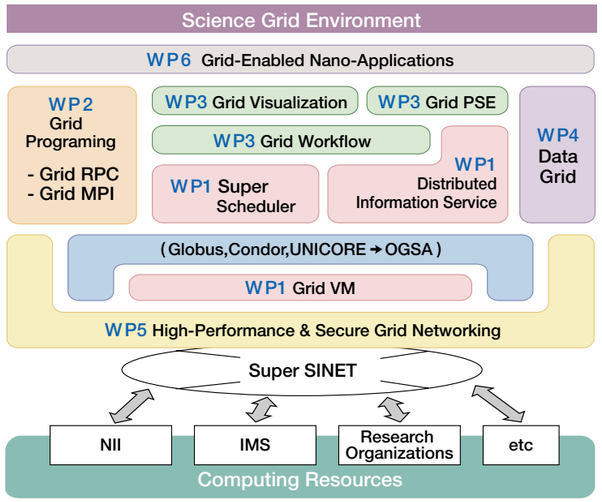
With regard to network function infrastructure for grid computing, NAREGI is conducting research and development on the control technology, enabling determination of the optimal route based on the network traffic measurement as well as to establish multiple alternative routes as backup. Work is also done on the communication protocol infrastructure, that is, optimization of the communication protocol for large sized file transfer on the grid. As for the security infrastructure, the goals are to develop a security model based on PKI and implement authentication infrastructure across multiple organizations.

Grid-Enabled Nano-Applications (WP6)

Theme ● Parallelized and decentralized nano-applications for the grid

Research subjects

The NAREGI project aims at making the nano-application software grid-ready, which have been developed by researchers at the Computational Nano-science Center at IMS. The NAREGI project is also working on development of middleware for the coupled simulations in the nano-science / nano-technology areas, to conduct applied research in the grid environment, and generally to create a grid environment suitable for nano-applications.



NAREGI Cooperative Research Institutes

● Industry :
Fujitsu, Hitachi, NEC
Consortium for Promotion of Grid Application in Industry
(including pharmacy, chemical metal, material companies, etc.)

● Academic sector :
Center for Grid Research and Development
Tokyo Institute of Technology, Osaka University, Kyushu University. Kyushu Institute of Technology
Utsunomiya University etc.
Computational Nano-science Center
The University of Tokyo
Kyoto University, Tohoku University
High Energy Accelerator Research Organization etc.

● Government :
National Institute of Advanced Industrial Science and Technology etc.

Contact : Center for Grid Research and Development (Collaborative Center for Research Grid)
TEL : 03-4212-2857 FAX : 03-4212-2803 E-mail : office@grid.nii.ac.jp

International Scholarly Communication Initiative (SPARC/JAPAN)

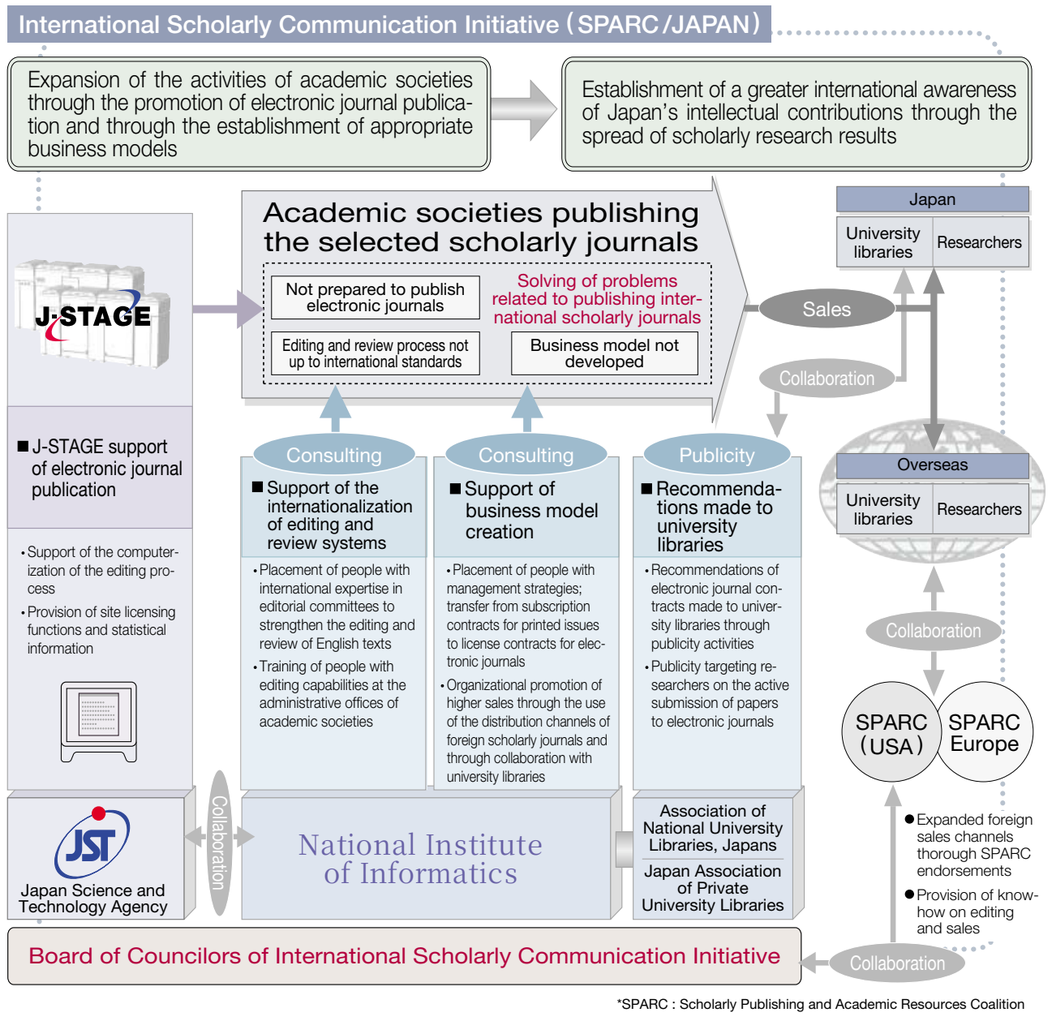
http://www.nii.ac.jp/sparc/

Background

To promote science, technology, and academic studies, it is important that research results are rapidly circulated through scholarly papers and that researchers and students are always able to make use of the latest research results. A record of the published scholarly papers of an individual or group is an important tool for evaluating that entity's research activities in nations and in academic fields.

In North America and Europe, efforts have been under way to create a competitive market that solves the problem of the high cost of scholarly journals. Those efforts have been called for by university library organizations and receive the support of researchers favoring the publication of scholarly journals in electronic form. Such endeavors, which are aimed at a more effective circulation of information on science, technology, and academic studies, are now bearing fruit. Leading examples are SPARC activities in the United States and SPARC Europe activities in Europe.

In recent years, the "Open Access" movement has developed in the United States and Europe to provide free online access to scientific and scholarly research papers.



*SPARC : Scholarly Publishing and Academic Resources Coalition

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 of further promoting the international dissemination of research results.

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

The NII selected 30 issues of English-language scholarly journals from 24 institutes.

Five biology Academic Societies have established the "UniBio Press," offering an e-journal package through J-STAGE, and the Unibio Press achieves results of getting site license contracts with university libraries.

Academic societies of physics area and materials area have also respectively discussed site license contracts with university library consortia.

Academic Societies of Mathematics have invited the person in charge of Cornell University's Project Euclid mathematical e-journal site and the Academic Societies hold the briefings for editors of mathematical journals throughout Japan with university libraries at Tohoku University.

Other academic societies have also been making a range of related efforts, archiving back-number issues, investigating e-journal strategies, assessing various business models, planning the launch of new e-journals, and more.

In addition to these support activities, the NII hosts a number of seminars and symposia to advocate stakeholders about the problems facing scholarly communication and the opportunities for change.

■ SPARC/JAPAN partnership journals

Journal Title	Publisher
Monumenta Nipponica	Monumenta Nipponica, Sophia University
Tohoku Mathematical Journal	Mathematical Institute, Tohoku University
Kodai Mathematical Journal	Department of Mathematics,Tokyo Institute of Technology
Nagoya Mathematical Journal	The Graduate School of Mathematics, Nagoya University
Proceedings of the Japan Academy, Series A : Mathematical Sciences	The Japan Academy
Journal of the Physical Society of Japan (JPSJ)	The Institute of Pure and Applied Physics (IPAP)
Japanese Journal of Applied Physics (JJAP)	
Progress of Theoretical Physics	
Analytical Sciences	The Japan Society for Analytical Chemistry
Journal of Bioscience and Bioengineering	The Society for Biotechnology, Japan
Journal of Chemical Engineering of Japan	The Society of Chemical Engineers, Japan
Polymer Journal	The Society of Polymer Science, Japan (SPSJ)
Bioscience, Biotechnology, and Biochemistry	Japan Society for Bioscience, Biotechnology, and Agrochemistry
Mammal Study	The Mammalogical Society of Japan
Journal of Mammalian Ova Research	The Japanese Society of Mammalian Ova Research (JSMOR)
Zoological Science	The Zoological Society of Japan (ZSJ)
Ornithological Science	The Ornithological Society of Japan
Paleontological Research	The Palaeontological Society of Japan
JSME International Journal	The Japan Society of Mechanical Engineers (JSME)
IEICE Transactions on Fundamentals of Electronics,Communications and Computer Sciences	The Institute of Electronics, Information and Communication Engineers (IEICE)
IEICE Transactions on Communications	
IEICE Transactions on Electronics	
IEICE Transactions on Information and Systems	
IEICE Electronics Express	
IPSJ Digital Courier	Information Processing Society of Japan (IPSJ)
Materials Transactions	The Japan Institute of Metals (JIM)
Cancer Science	The Japanese Cancer Association
The Japanese Journal of Physiology	The Physiological Society of Japan
Allergology International	Japanese Society of Allergology
Drug Metabolism and Pharmacokinetics	The Japanese Society for the Study of Xenobiotics (JSSX)

[30 titles from 24 societies/Institutes]

Contact : Contents Division, Scholarly Communication Section
TEL : 03-4212-2360 FAX : 03-4212-2375 E-mail : sparc@nii.ac.jp

Science Information Network (Super SINET/SINET)

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

The Science Information Network (SINET) 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. SINET is also connected to research networks such as Abilene[*1] in the U.S. and GÉANT[*2] in Europe to facilitate the international dissemination of research information and to promote collaboration with research networks overseas.
Super SINET has been in operation since January 2002, supporting advanced research projects within Japan.

Super SINET

This innovative SINET infrastructure was designed to support advanced research projects involving the enormous volumes of data that are nearly impossible to handle within conventional network environments. In addition to ultrahigh-speed network-dependent research such as high-energy and nuclear fusion science, space and astronomical science, genome analysis (bioinformatics), and nanotechnology research, Super SINET supplies an up to 10-Gbps network environment (GRID) to universities and research institutions participating in research projects such as supercomputer-interlocking distributed computing. Other research and development projects such as ITBL[*3] or NAREGI[*4] are also carried out using Super SINET, producing a significant amount of valuable research.
In the future, we aim to expand network functions to provide a more developed infrastructure tailored to the needs of the advanced research communities that use Super SINET.

*1 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 U.S.

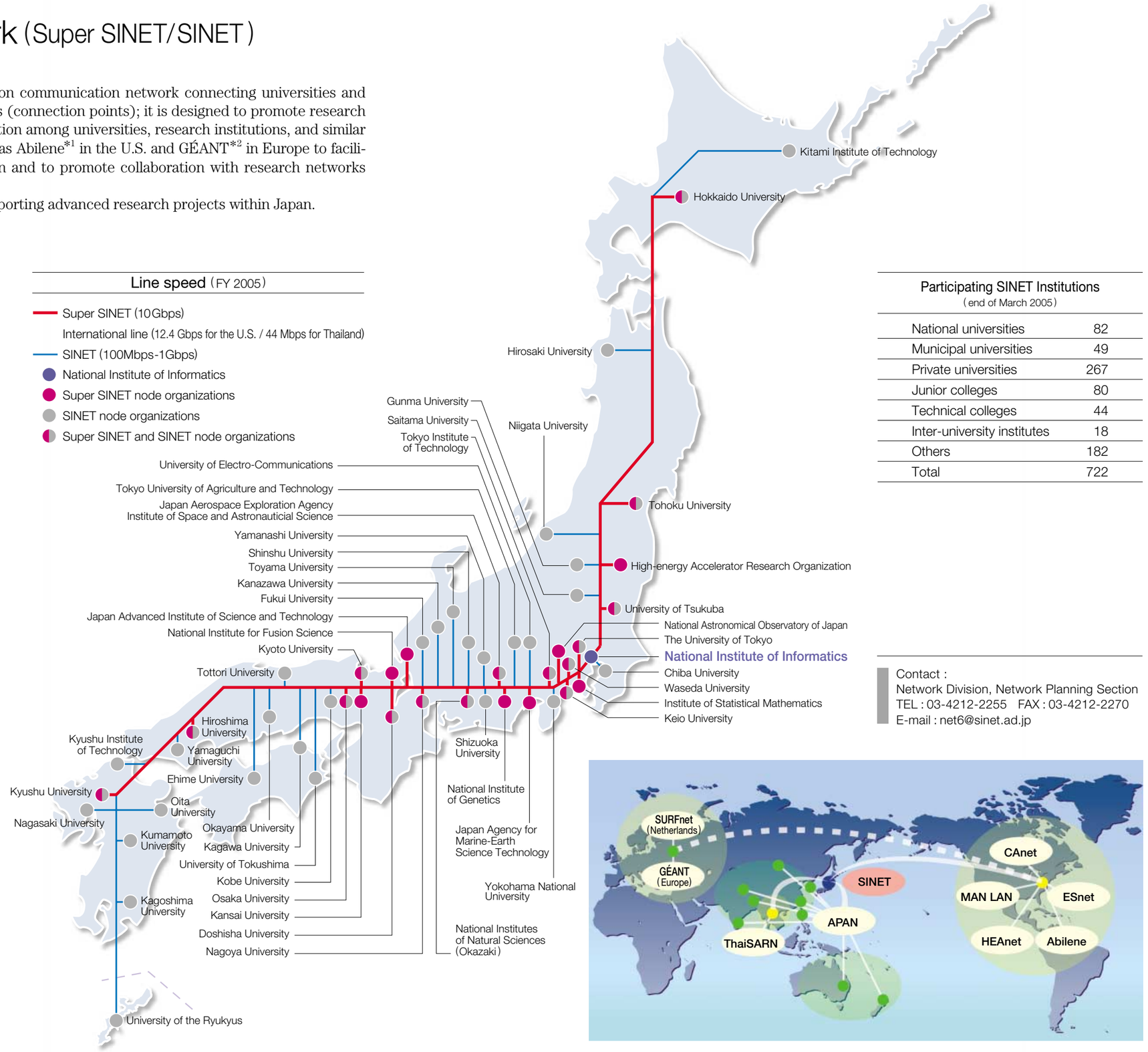
*2 GÉANT is a pan-European research network formed by the EC as a policy initiative, and covers more than 3,000 participating research and educational organizations in more than 30 countries.

*3 ITBL (IT-Based Laboratory) is a project begun in fiscal 2001 with the aim of realizing a virtual joint research environment based on information technology (IT).

*4 NAREGI (National Research GRID Initiative) is a project designed to establish ultra-high-speed computer networks for industry, government, and academia.

Super SINET Nodes

- Hokkaido University
- Tohoku University
- Institute for Materials Research, Tohoku University
- Institute of Fluid Science, Tohoku University
- University of Tsukuba
- High Energy Accelerator Research Organization (KEK)
- The University of Tokyo
- Institute for Solid State Physics, the University of Tokyo
- Institute of Medical Science, the University of Tokyo
- Tokyo Institute of Technology
- Institute of Statistical Mathmatics
- National Astronomical Observatory, Japan (NAOJ)
- Waseda University
- Keio University
- The Institute of space and Astronautical Science (ISAS)
- Japan Advanced Institute of Science and Technology
- National Institute of Genetics (NIG)
- National Institute for Fusion Science (NIFS)
- National Institute of Natural Sciences (Okazaki)
- Nagoya University
- Kyoto University
- Institute for Chemical Research, Kyoto University
- Doshisha University
- Osaka University
- Hiroshima University
- Kyushu University
- National Institute of Informatics (NII)
- NII Chiba Annex



Participating SINET Institutions
(end of March 2005)

National universities	82
Municipal universities	49
Private universities	267
Junior colleges	80
Technical colleges	44
Inter-university institutes	18
Others	182
Total	722

Contact :
Network Division, Network Planning Section
TEL : 03-4212-2255 FAX : 03-4212-2270
E-mail : net6@sinet.ad.jp

Catalog Information Service

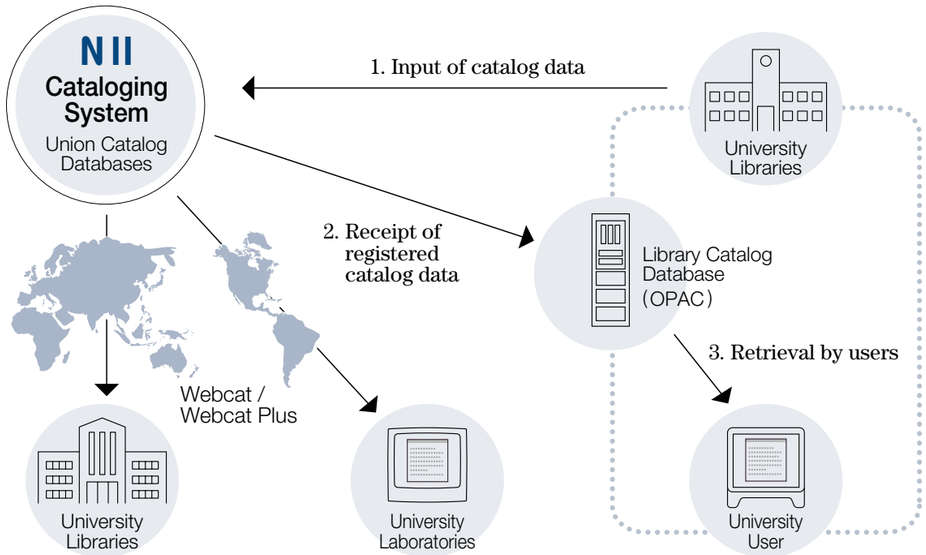
http://www.nii.ac.jp/CAT-ILL/contents-e/e_home.html

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

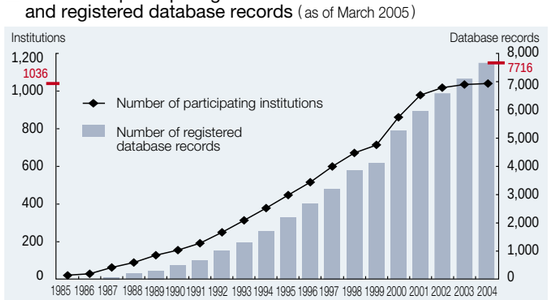
The NACSIS (National Center for Science Information Systems) is the predecessor of NII; its acronym is still used in the name of the service.

Cataloging System (NACSIS-CAT)

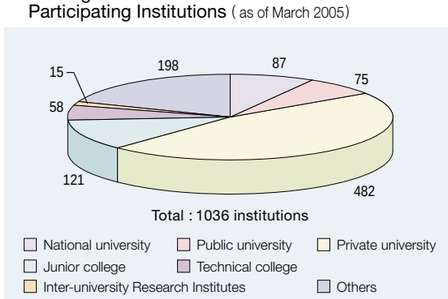
The NACSIS-CAT Cataloging System consists of unified catalog databases of academic documents (books and serials) in the collections of various institutions such as university libraries. These databases were compiled to support scholarly research and can be searched to determine instantly where specific materials are housed. Standardized cataloging data (MARC) is referred to when constructing databases in order to improve efficiency, and the work of inputting records is shared by university libraries and similar institutions throughout the country.
In 2004, the number of institutes participated to this system exceeded 1,030, with over 77 million registered records.
The unified catalog of books and serials consisting of the compiled databases can be accessed on the worldwide web online search service (Webcat / Webcat Plus).
NII is also conducting a joint project to construct a meta-database of academic resources provided by universities and research institutes in Japan on the Internet.



■ Number of participating institutions and registered database records (as of March 2005)



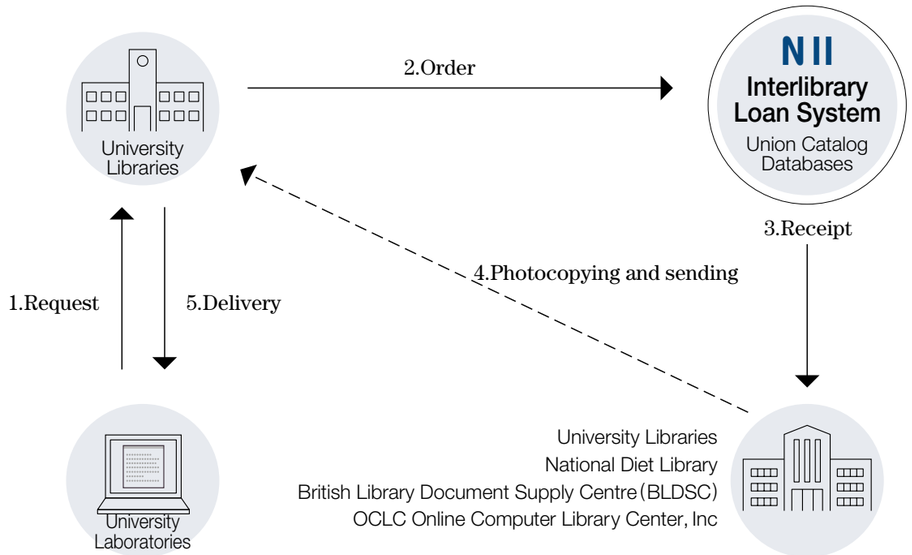
■ Catalog Information Service Participating Institutions (as of March 2005)



Contact : Contents Division, Catalog Information Management Section
TEL : 03-4212-2310 FAX : 03-4212-2375 E-mail : catadm@nii.ac.jp

Interlibrary Loan System (NACSIS-ILL)

The Interlibrary Loan System (NACSIS-ILL) supports the exchange of information among libraries to facilitate the provision of documents to researchers at universities and other institutions. The service applies the latest information from the unified 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 National Diet Library and 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 U.S.).
Approximately 1,180,000 requests were submitted to this system in 2004, and about 80% of the account was settled by Off-setting service.



Webcat

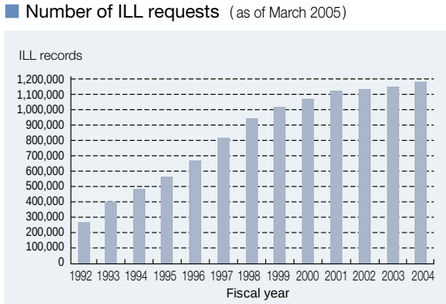
http://webcat.nii.ac.jp/

Webcat will be integrated with Webcat Plus within 2005.

■ Access to Webcat (as of March 2005)

Number of searches
16,776,000

■ Number of ILL requests (as of March 2005)

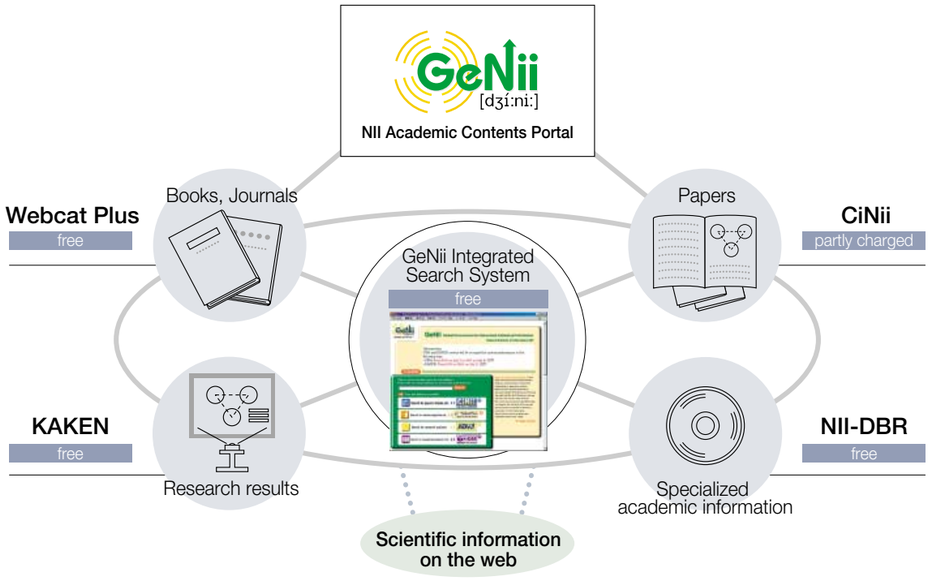


Contact : Contents Division, Academic Information Service Section
TEL : 03-4212-2320 FAX : 03-4212-2375 E-mail : illadm@nii.ac.jp

GeNii (NII Academic Contents Portal)

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

GeNii is a web-based service offering comprehensive academic content created by the National Institute of Informatics in collaboration with university libraries, academic societies, and researchers. This portal site began official service in April 2005.
Currently, GeNii presents information in four major areas: books/ journals, research papers, research results, and 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.



Contact : Contents Division, GeNii Desk
TEL : 03-4212-2300 FAX : 03-4212-2375 E-mail : geniiadm@nii.ac.jp

Webcat Plus

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

- With a “Associative search function”, you can easily find the books you need.
- Webcat Plus has a comprehensive book/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 2005) :

books	magazines
11,700,000	280,000

Contact : Contents Division, Webcat Plus Desk
TEL : 03-4212-2300 FAX : 03-4212-2375 E-mail : webcatplus@nii.ac.jp

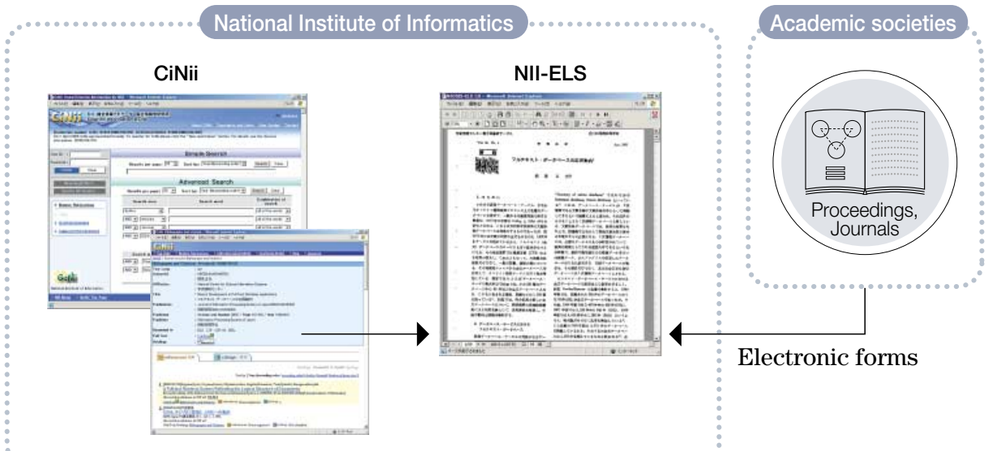
CiNii (Citation Information by National Institute of Informatics)

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

- CiNii is a search service for that helps you access text and cited papers within Japanese academic publications and other documents.
- The basic search service on the web does not require user registration. Enrolling is only necessary if you wish to read bibliographic data (including citation data) and paid papers.
- The Thomson Scientific Citation Index (Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index) is also available at the CiNii site. (There are some limitations to use of the Citation Index.)
- CiNii continually deepens its interaction with the other databases, such as the Japan Medical Abstracts Society Web, while expanding its own range of resources, including papers stored in the NII Electronic Journal Repository.

CiNii content (as of April 2005)

(1) NII citation index database
(2) NII electronic library content
(3) University scientific bulletins
(4) Japanese Periodical Index



NII Electronic Library Service (NII-ELS)

- NII-ELS holds the journals of many Japanese academic societies in page-by-page electronic form. As of the end of March, 2005, approximately 2 million papers published in journals from some 260 societies are stored in NII-ELS.

NII-ELS bibliography (as of March 2005) :

bibliographies	cited papers
8.90 million	7.20 million

NII Electronic Journal Repository (NII-REO)

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

- NII-REO is an electronic journal content storage system designed to provide electronic journal data on a stable, continuous basis. The availability of each item depends on the individual conditions agreed upon with the publishers.

Contact : Contents Division, CiNii Desk
TEL : 03-4212-2300 FAX : 03-4212-2375 E-mail : ciniiadm@nii.ac.jp

GeNii (NII Academic Contents Portal)

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

KAKEN (Grant-in-Aid 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 grant-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
- Presents lists of research areas and research themes in individual categories
- Information about research aided by private foundations is also continually being included in KAKEN

Stored documents (as of March 2005) : 300,000

Contact : Contents Division, KAKEN Desk
TEL : 03-4212-2300 FAX : 3-4212-2375 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 2005) : 1.4 million documents from 25 databases

Contact : Contents Division, NII-DBR Desk
TEL : 03-4212-2300 FAX : 03-4212-2375 E-mail : dbr@nii.ac.jp

JuNii (Portal to Japanese Universities at NII)

http://ju.nii.ac.jp/

- This site features educational, research, and other information posted on the web by Japanese universities and research institutes.
- This database is established through the joint efforts of many universities and research institutes.
- NII promotes and supports these universities to add to their repositories of information.

Stored databases (as of March 2005) : 80,000 documents

Contact : Contents Division, JuNii Desk
TEL : 03-4212-2300 FAX : 03-4212-2375 E-mail : metadb@nii.ac.jp

Online Scientific Terms (Sciterm)

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

For the broad dissemination and the precise evaluation and verification of research results, it is critical to specify definitions and usage of scientific terms that all researchers can accept. Therefore, significant efforts have been made in each of the scientific fields to standardize specific scientific terms, resulting in the publication of a series of Japanese 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. The Table mainly indicates scientific terms (Japanese, reading in Romanized text, reading in Kana and English), word class, and reference terms.

■ Registered data (as of March 2005)

Number of registered Series :	22
Number of registered scientific terms :	128,000

■ Access to Sciterm (as of March 2005)

Access to the top page	403,000

Contact : Contents Division, Academic Portal Section
TEL : 03-4212-2330　FAX : 03-4212-2375　E-mail : sciterm@nii.ac.jp

Academic Society HomeVillage

http://wwwsoc.nii.ac.jp/index-e.html

Academic Society HomeVillage is a service to provide homepage data area for Japanese academic societies. The purpose of this service is to collect scholarly research relating to Japanese academic societies within the WWW server supported by NII and to suport the activities of academic societies and scholary research through dissemination of information over the Internet. This service also includes a search tool that allows users to find information and links relating to Japanese academic societies. Users are conducted through input society name or related keywords; users can also select societies organized according to alphabetically, or within a range of fields defined by the Science Council of Japan. This service has been described as a portal site for learning, education, research, and culture within a number of media reports, and has been highly rated as a useful source of information.

■ Registered data (as of March 2005)

Participating societies	Details	
	Web hosting service	Links to academic society websites
909	747	162

■ Access to the Academic Society HomeVillage (FY2004)

Access to the top page
417,000

Contact : Contents Division, Academic Information Management Section I
TEL : 03-4212-2340　FAX : 03-4212-2370　E-mail : wwwsoc@nii.ac.jp

Education and Training Program

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 in order to expand opportunities of training.

- **NACSIS 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.

NACSIS-CAT training course

Advanced Training Programs

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

- **Karuizawa Information Processing Seminar**
  This seminar provides training in the most advanced technologies and theories of information processing, tailored to the current rapidly developing infrastructure of academic information.
- **Information Security Training Course**
  This course provides training in the basics of information security technologies and rules.
- **Network Security Training Course**
  This course provides the opportunity for staff members administering and operating network services to catch up on the most recent and advanced network security technologies.
- **Network Administration Training Course**
  This course provides instruction on infrastructure technology relating to the establishment and operation of an institute's internal LAN.
- **NACSIS-CAT Advanced Training Course**
  This course aims to educate core staff members responsible for the establishment of databases in NACSIS-CAT member libraries and to train NACSIS-CAT /ILL system training course teachers.
- **Academic Portal Training Course**
  This course provides the opportunity to learn the professional knowledge and skills to build and administer academic portals at universities and other academic institutes.

Academic information literacy training course

- **Academic Information Literacy Training Course**
  This course is designed to train core staff members in the educational field of academic information literacy at universities and other academic institutes.
- **Seminar for University Librarians**
  This seminar provides the latest professional knowledge and skills for those working in universities as core librarians to improve quality of library management.

Support 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 text 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 activity support staff.

Contact :
Planning and Coordination Division, Training Section
TEL : 03-4212-2175 FAX : 03-4212-2230
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.

Research Cooperation

Grants-in-aid for Scientific Research (as of March 2005)

Research Categories	Number	Awarded amount (Thousands of yen)
Scientific Research (A) (2)	4	47,970
Scientific Research (B) (1)	1	2,400
Scientific Research (B) (2)	11	50,100
Scientific Research (C) (1)	1	1,500
Scientific Research (C) (2)	4	6,600
Exploratory Research	3	4,300
Encouragement of Young Scientists (A)	3	21,320
Encouragement of Young Scientists (B)	17	18,200
Scientific Research in Priority Areas (1)	1	3,500
Scientific Research in Priority Areas (2)	12	76,700
JSPS Fellows	5	6,000
Publication of Scientific Research Results	4	54,500
Total	66	293,090

Adjustment cost for the promotion of science and technology

	3	310,804

University-Industry Cooperation and Collaboration (as of March 2005)

Research Categories	Number	Amount Received (Thousands of yen)
Joint Research with the Private Sector, etc.	6	9,885
Commissioned Research	17	174,244
Grants and Endowments	28	39,972

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 2005, 117 such projects were carried out

NII Visiting Researchers (as of March 2005)

Visiting Researchers	(Foreign Research Scholars)	17
	(JSPS Postdoctoral Fellowship for Foreign Researchers)	5
	(Others)	6
Cooperative Scholars		6
Requested Researchers		1
Technical Assistant	(Research Support and Promotion Staff)	5
Project Researchers	(Part-time Researchers)	5
	(Scientific Research Support Staff)	22
	(Researchers Promoting Science and Technology)	25
	(Researchers for University-Industry Collaboration)	21
Research Assistants		36
Special Joint Researchers		19
	Total	168

Contact : Research Cooperation Division,
Research Cooperation Section
TEL : 03-4212-2105 FAX : 03-4212-2120
E-mail : kenkyou@nii.ac.jp

Intellectual Property

Number of Inventions

Total Number of Inventions and Applications for Patents as of March 2005

Total	Attribution		Patent Applications
	National Attribution	Individual Attribution	
8	7	1	8

Inter-University Research Institute Corporation / Intellectual Property Office

Participating institutes in Inter-University Research Institute / Intellectual Property Office Organization Project

National Institutes for the Humanities :
National Museum of Japanese History, National Institute of Japanese Literature, International Research Center for Japanese Studies, Research Institute for Humanity and Nature, National Museum of Ethnology

National Institute of Natural Sciences :
National Astronomical Observatory of Japan, National Institute for Fusion Science, National Institute for Basic Biology, National Institute for Physiological Sciences, Institute for Molecular Science

High Energy Accelerator Research Organization :
Institute of Particle and Nuclear Studies, Institute of Materials Structure Science

Research Organization of Information and Systems :
National Institute of Polar Research, National Institute of Informatics, The Institute of Statistical Mathematics, National Institute of Genetics

The Ministry of Education, Culture, Sports, Science and Technology accepted the application and subsequently approved the so-called "University Intellectual Property Organization Project," an initiative designed to help organize a system for the strategic creation, acquisition, and utilization of intellectual property in universities. Thirteen inter-university research institutes have combined forces in this endeavor, with the NII as the collective representative. This project consists of a five-year plan under which an intellectual property office is established within each Inter-University Research Institute Corporation to promote the distinctive intellectual property of each such institute and to develop positive applications for the use thereof.

Contact : Intellectual Property Office
TEL : 03-4212-2125 FAX : 03-4212-2187
E-mail : chizai-staff@nii.ac.jp

International Activities

International Exchange Agreement

The NII actively promotes international cooperation with prominent overseas institutes in both research and services and is striving to expand its activities in these areas even further. The Global Liaison Office was established in January 2003 to promote the conclusion of international exchange agreements and to discuss various additional international matters. Accordingly, the NII is concluding agreements with the following organizations.

USA	School of Computer Science and Informatics, University of Michigan
	College of Engineering, University of Washington (Seattle)
	The Thomson Cooperation (Thomson Scientific)
France	Computer Science Institute of Nantes Atlantic, University of Nantes
	National Institute of Informatics and Automatic Control Research (INRIA; Institut National de Recherche en Informatioque et en Automatique)
	INPG; Institut National Polytechnique de Grenoble
	Joseph Fourier University (UJF; Universite Joseph Foureir)
U.K.	The Open University
	Department of Computer Science, Faculty of Engineering Sciences, University College London
Germany	Fakultät für Angewandte Informatik, Universität Augsburg
	Hochschulbibliothekszentrum des Landes Nordrhein-Westfalen

Conclusion of international exchange agreement with INRIA (February 16, 2004)

Czech Republic	Czech Technical University (CTU)
China	State Key Laboratory on Microwave and Digital Communications, Tsinghua University
Thailand	Chulalongkorn University
	Asian Institute of Technology (AIT)
Vietnam	International Research Center, Multimedia Information, Communication and Application, Hanoi University of Technology (HUT / MICA)
Others	UNESCO
	North American Coordinating Committee on Japanese Library Resources (NCC)

(February, 2005)

Cooperation with Overseas Institutes of Japanese Studies and Libraries

Forty-seven universities, research institutes, and libraries in Europe and Asia that deal in Japanese-related data have elected to participate in the NII Catalog System (NACSIS-CAT). More than 340,000 academic documents have been registered here from these overseas universities and research institutes.

Overseas NACSIS-CAT Participating Institutes (end of March 2004)

U.K.	Oriental and India Office Collections, The British Library
	Cambridge University Library
	Bodleian Library, University of Oxford
	School of East Asian Studies Library, University of Sheffield
	University of Stirling Library
	The School of Oriental and African Studies, University of London
	The Japan Foundation London Language Centre
	Department of Japanese Antiquities, The British Museum
	Japan External Trade Organization (JETRO) London
	Sainsbury Institute for the Study of Japanese Arts and Cultures
Germany	Institute of East Asian Studies, Duisburg University
	Department of Japanese Studies, University of Heidelberg
	University of Munich, Institute of East Asian Studies, Japanese Studies
	The Japan Cultural Institute in Cologne, The Japan Foundation
	Japanese-German Center Berlin
	EKO-Haus der Japanischen Kultur e.V.
	Marburg University, Japan Center, Library / Marburg University, Study of Religions, Library
	State Library of Berlin, Germany
	Insititute for Japanese Culture Library, Tubingen University
Belgium	East-Asian Library, Katholieke Universiteit Leuven
Switzerland	Japanische Bibliothek, Abteilung Japanologie, Ostasiutisches Seminar der Universität Zürich
Sweden	Stockholm University Library
U.S.A.	International Arctic Research Center, University of Alaska Fairbanks
	Columbia University Teachers College
Thailand	Japan Cultural Center, Bangkok, The Japan Foundation

People's Republic of China	
	Beijing Center for Japanese Studies
	China Agricultural University Library
	Library of Dalian University of Technology
	Peking University Library
	Wuhan University Library
	Library of Nanjing University
	Library of Zhongshan University
	Jilin University Library
	Tianjin Library
	Northeastern University Library
	Liaoning Provincial Library
	Library of East China Normal University
	Remin University Library
	Tsinghua University Library
	The Library and the Audio Visual Educationary Center of the Dalian Foreign Language University
	Library of Xiamen University
	Fudan University Library
	Library of Shanghai Jiao Tong University
	Centre for Documentation and Information, Chinese Academy of Social Sciences
	National Library of China
Republic of Korea	
	Institute of Japanese Studies, Hallym Academy of Sciences, Hallym University
	Gyeongsang National University Library

Accepting Foreign Scholars (FY2005)

Name (Country)	Research theme	Period
ANGELINO, Henri (France)	Promotion of Japan-France collaborative research and its technology transfer	December 1, 2000 - March 31, 2006
HOULE Michael E (Canada)	Scalable clustering and classification based on approximate similarity search	February 1, 2004 - March 31, 2006

Researcher dispatched to foreign countries (FY2004)	1
Visiting researchers (as of March 31, 2005)	72

NII International Symposium

NII has held a regular "NII International Symposium" since 2002. The third and fourth symposia were held in FY2004.

The third symposium, entitled "e-Biology Initiative: Towards New Frontiers of Biology," was held at Takeda Hall, The University of Tokyo, on March 11, 2005.

The fourth symposium, entitled "International Symposium on the Future of the Book," was held at the Hitotsubashi Memorial Hall, National Center of Sciences, on March 25, 2005.

3rd NII International Symposium
"e-Biology Initiative: Towards New Frontiers of Biology"
(Takeda Hall, The University of Tokyo, March 11, 2005)

International Activities of Scholarly Information Services

Catalog Information Service (for university libraries)

The catalog system (NACSIS-CAT) presents a Z.39.50-based on-line reference service as an expansion of the MARC database.

We work in coordination with HBZ of Germany on Z.39.50-based cross-referencing of the catalog data.

The ILL system (NACSIS-ILL) allows document requests to the BLDSC in the U.K., while expanding the range of its international document delivery service in the global ILL business.

Through interconnection with the American OCLC system, we help Japanese and U.S. university libraries work more efficiently. Furthermore, a collaborative initiative with Korean KERIS provides a document copy service for Japanese and Korean university libraries.

NII Global Environment for Networked Intellectual Information (GeNii, see p.28-30)

GeNii provides global access to Japanese books, magazines, research papers, research reports, and documents on specific sciences.

For the fee-based information of CiNii (Citation Information, one of the GeNii components), users may choose a fixed-price system for organization members or convenient credit-card payment.

Contact : International Affairs Division, International Planning Section
TEL : 03-4212-2165 FAX : 03-4212-2180 E-mail : int-op@nii.ac.jp

Dissemination of Research Results

The NII holds lectures and symposiums and issues publications under the general aim of disseminating research findings on informatics widely throughout society.

Open House

The NII, a research institution that is widely open to the public, holds "Open Houses" to present its activities and research results to the public as well as to researchers and Ph.D. candidates.

NII Open House (June, 2004)

NII Open Lecture

The NII holds its "NII Open Lectures" in the Kansai area and in Tokyo to discuss current issues in NII research and development.

NII Open Lecture (in Tokyo area, November, 2004)

Symposiums and Study Meetings

The symposiums and study meetings organized by the NII provide opportunities for multi-faceted discussion of informatics by participating researchers from Japan and abroad. The NII also holds research meetings for exchanges among researchers and technology specialists interested in informatics, through the presentation of reports and other events.

Presentations

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

Library Fair & Forum (November, 2004)

Contact : Publicity and Dissemination Division, Dissemination Section
TEL : 03-4212-2145 FAX : 03-4212-2150
E-mail : seika@nii.ac.jp

Open Lectures and Seminars

The NII also holds open lectures and seminars. In particular, the Karuizawa Saturday Salon—held at the International Seminar House for Advanced Studies eight times a year, with researchers and experts invited to lecture—is a well-established community service. Lecture records are actively published through distribution via Internet, videotapes of lectures, and publication of lecture collections. Additionally, the NII regularly holds its "NII Public Lectures" on various informatics-related themes.

NII Public Lecture (February, 2005)

Karuizawa Saturday Salon (May, 2004)

Publications

The NII publishes books and periodicals detailing its research findings.

Progress in Informatics

"Progress in Informatics" is published as an international peer-reviewed journal, aiming at the promotion of research and development in the broad area of informatics. (The first issue: March, 2005) 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. "Progress in Informatics" attempts to promote the exposure internationally, encouraging the electronic journal and participating in CrossRef.

NII Technical Report

The "NII Technical Report" provides the Institute's most recent research results, including research papers, presentation papers, and reference manuals. The report is also available through the NII website.

Informatics Series

The "Informatics Series" is a monograph series covering the research findings of the NII; readers will also find transcripts of the open lectures, published under the supervision of NII.

NII Series (Maruzen Library)

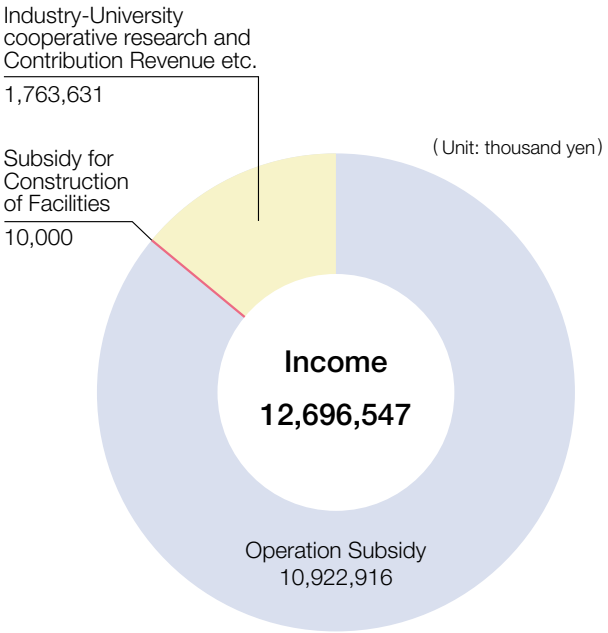
"NII Series" is published as a paperback edition with broad themes. The themes are set on the basis of the research results, accomplishments of development/projects at the NII, considering social request. This series targets general working people and college/high school students.

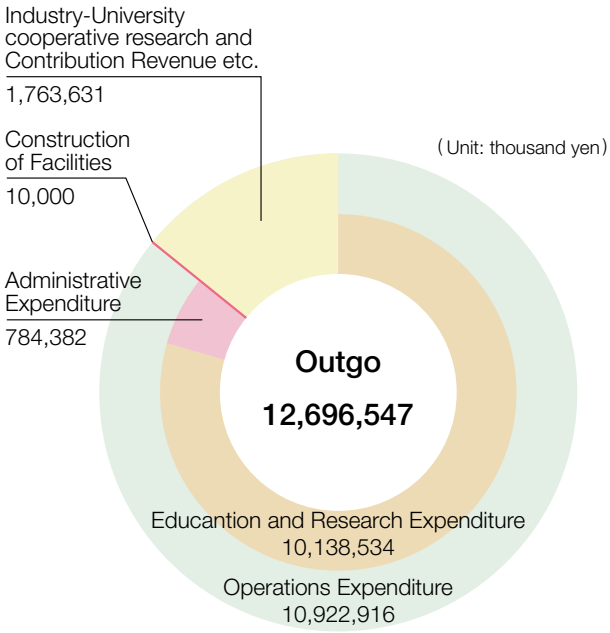
Staff / Budget

Staff (as of April 1, 2005)

	Director General	Deputy Director General	Professor	Associate Professor	Professor	Assistant Professor	Subtotal	Other Employees	Total
Full-time Employees	1	1	29	28		17	76	68	144
Visiting Professors etc.			29	14			43		43
Non-Japanese Visiting Professors etc.			2				2		2
Coordinate Professors etc.			2	2			4		4
Specially Appointed Professors etc.			4	5	1	1	11		11
Other Outside Researchers									56
Support Staff									52
Graduate Students									91

Budget (F.Y.2005)





Organization

(as of June 2005)

- **Director General** — Masao Sakauchi
  - Advisory Board
  - Administrative Council
- **Deputy Director General** — Yoh'ichi Tohkura
- **Executive Director of Research** — Yoh'ichi Tohkura

Development and Operations Department
Director : Jun Adachi
Deputy Director : Kazunobu Konishi

- **Planning and Coordination Division** — Director : Tatsuo Kaida
  - Planning and Coordonation Section
  - Information Infrastructure Development Section
  - Training Section
- **Network Division** — Director : Shinichi Suzuki
  - Network Planning Section
  - Network Operation Section
  - Network Security Section
- **Contents Division** — Director : Koh'ichi Ojiro
  - Cataloging Information Management Section
  - Academic Information Service Section
  - Academic Portal Section
  - Academic Information Management Section I
  - Academic Information Management Section II
  - Scholarly Communication Section

Administration Department
Director : Shinichi Takahashi

- **General Affairs Division** — Director : Junichi Ueda
  - General Affairs Section
  - Regulation and Evaluation Section
  - Personnel Section
- **Budget and Accounts Division** — Director : Satoshi Oshima
  - Budget Section
  - Accounts Section
  - Supplies Section
  - Facilities Section

International and Research Cooperation Department
Director : Masamitsu Negishi

- **Research Cooperation Division** — Director : Shoichi Murata
  - Research Cooperation Section
  - Graduate School Section
- **International Affairs Division** — Director : Atsushi Suzuki
  - International Planning Section
  - International Exchange Section
- **Publicity and Dissemination Division** — Director : Keiko Ishimura
  - Planning and Publicity Section
  - Dissemination Section
  - Information and Document Section
- **Office for Public Relations Promotion** — Director : Shigeki Yamada

- **Planning and Promotion Strategy Office** — Director : Masao Sakauchi
- **Global Liaison Office** — Director : Masamitsu Negishi; Acting Director : Henri Angelino
- **Collaborative Center for Research Grid** — Project Leader : Kenichi Miura
- **Scholarly Communication Office** — Director : Jun Adachi
- **Academic Information Infrastructure Planning and Promotion Headquarters** — Director : Masao Sakauchi

Foundations of Informatics Research Division
Director : Asao Fujiyama

- Foundation of Algorithms
- Mathematical Informatics
- Symbolic Reasoning
- Cognitive Science
- Quantum Computing
- Bioinformatics *

Professor	Makoto Tatsuta	Ken Hayami	Ken Satoh
	Katsumi Inoue	Yoshihisa Yamamoto	
Associate Professor	Takeaki Uno	Noriko Arai	Nigel Henry Collier
	Nobuhiro Furuyama	Keiji Matsumoto	
Assistant Professor	Kazushige Terui	Ken Kaneiwa	
Visiting Professor	Yuzuru Tanaka	Hideaki Sugawara	
Visiting Associate Professor	Mio Murao		

Infrastructure Systems Research Division
Director : Shoichiro Asano

- Computer Architecture
- Network Architecture
- Functional Network
- Information Networking
- Cryptography
- High End Computing
- Network Security *

Professor	Tomohiro Yoneda	Shoichiro Asano	Shigeki Yamada
	Noboru Sonehara	Kenichi Miura	
Associate Professor	Takashi Matsumoto	Shunji Abe	Jun Matsukata
	Kae Nemoto	Asanobu Kitamoto	
Assistant Professor	Soichiro Hidaka	Youdai Watanabe	Michihiro Koibuchi
Visiting Professor	Toru Hasegawa		
Visiting Associate Professor	Susumu Yoneda		

Software Research Division
Director : Katsumi Maruyama

- Programming Languages
- Software Engineering
- Data Engineering
- Distributed Processing
- Real-time Software
- Software Reliability *
- Large-scale Software *

Professor	Akihiko Takano	Noriko Kando	Jun Adachi
	Katsumi Maruyama	Shin Nakajima	
Associate Professor	Ichiro Satoh	Kenro Aihara	Yusheng Ji
	Frederic Andres		
Assistant Professor	Hiroshi Mo	Hiroyuki Kato	
Visiting Professor	Satoshi Matsuoka	Masato Takeichi	Kazuhiko Kato
Visiting Associate Professor	Shigeru Chiba		

Multimedia Information Research Division
Director : Jun Adachi

- Image Processing
- Multimedia Integration Processing
- Information Retrieval
- Computer Vision *

Professor	Shin'ichi Satoh	Hiromichi Hashizume	
Associate Professor	Helmut Prendinger	Makoto Kanazawa	Norio Katayama
Assistant Professor	Eiji Kamioka	Imari Satoh	
Visiting Professor	Yuichi Nakamura		

Intelligent Systems Research Division
Director : Shinichi Honiden

- Knowledge Systems
- Computational Intelligence
- Human-Machine Symbiosis
- Robotics *

Professor	Shinichi Honiden	Seiji Yamada	Haruki Ueno
Associate Professor	Hiroko Satoh	Akihiro Sugimoto	
Assistant Professor	Ryutaro Ichise		
Visiting Professor	Yoshiaki Shirai		
Visiting Associate Professor	Tomoko Matsui		

Human and Social Information Research Division
Director : Teruo Koyama

- Information Management
- Information Use
- Library Information
- Information Institution

Professor	Keizo Oyama	Teruo Koyama	Akira Miyazawa
Associate Professor	Kyo Kageura	Hironobu Gotoda	Masaki Nishizawa
	Hitoshi Okada		
Assistant Professor	Kouichirou Ueki	Koji Eguchi	Keita Tsuji

Research Information Research Division
Director : Akira Miyazawa

- Humanities and Social Sciences Information
- Science and Engineering Information
- Biosciences Information

Professor	Hajime Kitaoka	Masamitsu Negishi	Asao Fujiyama
Associate Professor	Morio Shibayama	Yuan Sun	

Research Center for Testbeds and Prototyping
Director : Shigeki Yamada

- Office for Promotion of Research Projects
- Office for Cooperative Research Programs
- High-Speed Network Laboratory *
- High Quality Networking Laboratory *
- Full-Text Contents Laboratory *
- Virtual Library Laboratory *

Professor	Atsuhiro Takasu	Hideaki Takeda	
Associate Professor	Kazuya Kodama	Hiroshi Hosobe	
Assistant Professor	Hironori Washizaki	Masashi Inoue	Ikki Ohmukai
Visiting Professor	Yasuhiko Yasuda	Shigeo Urushidani	Hisamichi Okamura
	Shun Tsuchiya	Henri Angelino	
Visiting Associate Professor	Jun Fujioka	Mitaro Namiki	

Research Center for Information Resources
Director : Akihiko Takano

- Office for Research Coordination and Promotion
- Data Collection Laboratory *

Professor	Akiko Aizawa		
Associate Professor	Keiko Watanabe		
Assistant Professor	Takashi Koga		
Visiting Professor	Kazuaki Kishida	Hayato Yamana	Michael E. Houle

Collaborative Research Unit

Professor	Masayuki Nakajima	Koh'ichiro Ochimizu				
Associate Professor	Katsushiki Yamaoka	Yasuo Tan				
Visiting Associate Professor	Ichiro Ide	Tomoo Inoue	Toshihiko Nozue			
	Sinji Yoshioka	Takaaki Nara	Koh'ichi Takeuchi			

Visiting Professor	Mitsuo Wada	Manabu Omiya	Yoshiaki Nemoto	Hideaki Sone	Yoh'ichi Okabe	Yasushi Wakahara
	Toyohide Watanabe	Ryuji Matsuyama	Yasuo Okabe	Fumio Kishino	Shinji Shimoshino	Kazuaki Murakami
	Yoshiyuki Watase	Yoshihiro Chikada	Shigeki Goto	Hajime Matsuoka		
Visiting Associate Professor	Nobuo Kawaguchi	Koji Okamura				

*Sections staffed by Visiting Researchers

List of Graduate Students

Department of Informatics, Graduate University for Advanced Studies

(as of April 2005)

ALEXANDER IMRE KOVACS
Tomoko Kajiyana
Atsushi Katayama
Kanokwan Atchariyachanvanich
Takayuki Koai
Kazuki Kobayashi
Hiroshi Sasaki
Chikahito Nakajima
Kazuaki Naruse
Satoko Fujisawa
Taisuke Horiuchi
Yuki Matsuoka
WANG YUXIN

Commissioned Graduate University (Special Collaboration Research Students)

(as of April 2005)

Collaborative Graduate University

(as of April 2005)

Graduate School of Information Science and Technology

Ahmad Suffian
Fuyuki Ishikawa
Takuya Karube
Fuminori Yamagishi
Zhixing LIU

Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology

Peng Li

* Names provided with students' permission only

NII Library

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 2005)

Document type	Books	Bound journals	Journals (in titles)
Domestic documents	7,903	8,524	218
Foreign documents	6,853	3,600	283
Total	14,738	12,124	501

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 Communication Society
6	Wiley Interscience	John Wiley & Sons.
7	Kluwer online	Kluwer
8	CUP online	Cambridge University Press
9	OUP online	Oxford University Press
10	Encyclopedia of Library Information 2nd. ed. Online	Marcel Dekker

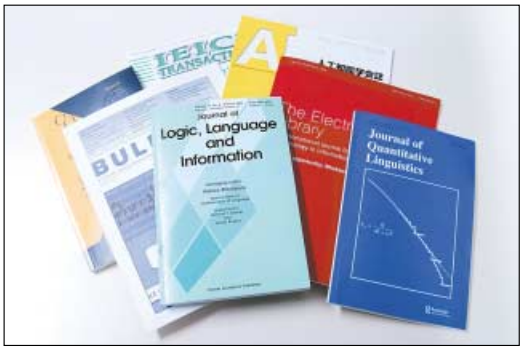
Facility, Equipment

	Reading room	Stack room
Area	180m²	271m²
Seats	8	3
PC for search	2	1
Other equipment	Automatic Book Circulation Machine (Sumitomo 3M ABC-III)	Micro reader printer (Minolta SP7000)
	Copier (FUJI XEROX ApeosPort C5540I)	

Reading room

Stack room

Collaboration signing ceremony



Subscribed journals

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/index-j.html

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

National Institute of Informatics
Site area : **6,842m²** (Occupied by NII : 3,036m²)
Floor space : **40,418m²** (Occupied by NII : 17,938m²)

Center for Grid Research and Development

To promote more effective development of grid research, the center is situated in a building near the National Center for Sciences, which houses the Collaborative Research Grid Center. Extensive close cooperation is anticipated among the government, academia, and the private sector at the center for Grid Research and Development.

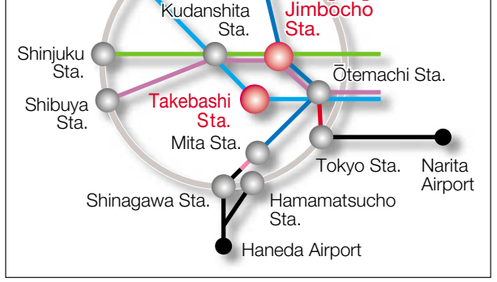
Center for Grid Research and Development

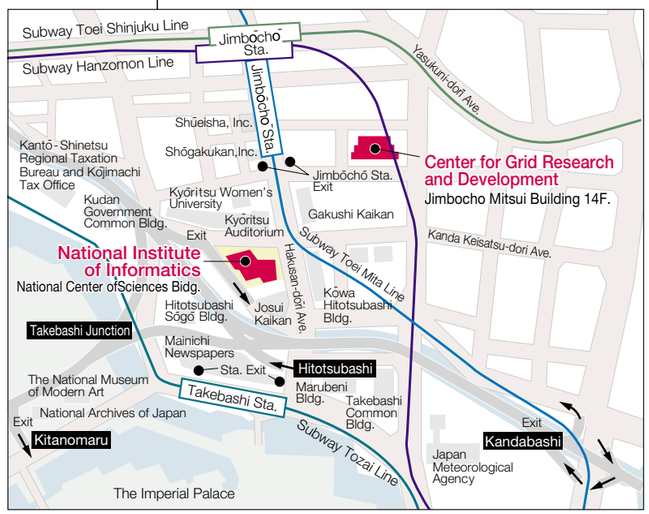
http://www.naregi.org/

Jimbocho Mitsui Building 14F, 1-105 Kanda-jimbocho,
Chiyoda-ku, Tokyo 101-0051
TEL. +81-3-4212-2857

Guide Map

Route Map





Subway Toei Shinjuku Line
Subway Hanzomon Line
Subway Tozai Line
Subway Tozai Line
Subway Marunouchi Line
JR Yamanote Line

Facilities / Location

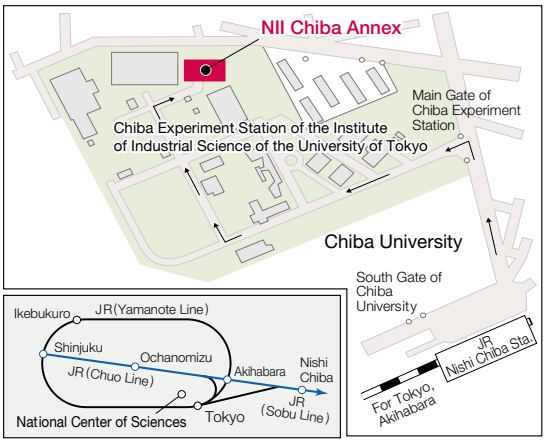
Chiba Annex (Inage-ku, Chiba City)

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 (Karuizawa Town, Nagano Prefecture)

The International Seminar House for Advanced Studies was built in March 1997 in Karuizawa, Nagano Prefecture, as a venue for international conferences, seminars, and training. It has a seminar room that can hold 46 persons, accommodations, and other facilities. It is widely utilized not only by the NII but also by various universities and research institutes.

Seminar at the International Seminar House for Advanced Studies

International Seminar House for Advanced Studies Inose Lodge

1052-471, Okan Minamihara Nagakura, Karuizawa, Karuizawa-cho, Kita Saku-gun, Nagano 389-0111
TEL. +81-267-41-1083

Guide Map

Site area : **3,339m²**
Floor space : **667m²**

Inter-University Research Institute Corporation /
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National Institute of Informatics