National Institute of Informatics

2004

2004

National Institute of Informatics

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Introduction

The National Institute of Informatics (NII) began a new chapter this April as a member of the Inter-University Research Institute Corporation/Research Organization of Information and Systems. Going forward, the NII aims to develop new fields of research in cooperation with the three remaining member institutes that comprise the Research Organization of Information and Systems, in addition to its continuing underlying mission involving comprehensive research in informatics (from the natural sciences to humanities and the social sciences), graduate education, and the innovative distribution and transmission of scholarly information. Furthermore, an Intellectual Property Office was established this year to serve the entire Inter-University Research Institute Corporation, with the aim of applying the intellectual property established by academic research institutes to the benefit of society as a whole. From this point forward we must listen to the requests of those within and outside of academia and have the courage to anticipate change more than ever before.

The rapid development of information technology has supported a range of societal activities and has helped establish a unifying societal infrastructure. For example, cellular phones are everywhere, providing a wide range of essential functions, with development accelerating toward truly ubiquitous information technology. Information technology has thus penetrated every element of society, transforming societal structures in the process, with profound effects on daily life, industry and commerce, education and culture, and interpersonal communication. At the same time issues have arisen concerning network security and a range of corresponding ethical questions. Under these circumstances the role of NII has become significantly enhanced.

Fiscal 2004 represents a period of great change for NII. We continue to work to improve informatics research, not simply to advance science and technology for the benefit of the field but also for the sake of society as a whole. We look forward to your continued support and guidance.

May 2004

Yasuharu Suematsu

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.
	March	Advisory Panel on a Core Institution for Scientific Research in the Information Field issues its report.
	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.
	April	Preparatory Office is established for the Core Institution for Scientific Research in the Information Field; committee is formed in May.
	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.
	September	Research Planning and Promotion Strategy Office is founded.
	October	International Course is established within Ph.D. Program in Informatics.
2003	January	Global Liaison Office is formed.
	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.

Administrative Council

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

Setsuo Arikawa	Vice President, 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, Graduate School of Information Science and Engineering, Tokyo Institute of Technology
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, University of the Air
Katsumi Wakabayashi	Professor Emeritus, Gunma University
Masao Sakauchi	Deputy Director General, NII / ExecutiveDirector of Research, NII
Masamitsu Negishi	Director, International and Research Cooperation Departmant, NII
Yoh'ichi Tohkura	Director, Development and Operations Department, NII
Shoichiro Asano	Director, Infrastructure Systems Research Division, NII
Katsumi Maruyama	Director, Software Research Division, NII
Takeo Yamamoto	Director, Multimedia Information 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
Jun Adachi	Director, Research Center for Information Resources, 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	Director, Science Museum, Tokyo
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	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
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 Visiting Professor, National Institution for Academic Degrees and University Evaluation
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	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
Walter L.Engl	Professor Emeritus, Aachen Institute of 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
Herwig Kogelnik	Adjunct Photonics System Research Vice President, Bell Laboratory
Charles Kao	Former Vice Chancellor of the Chinese University in Hong Kong

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)

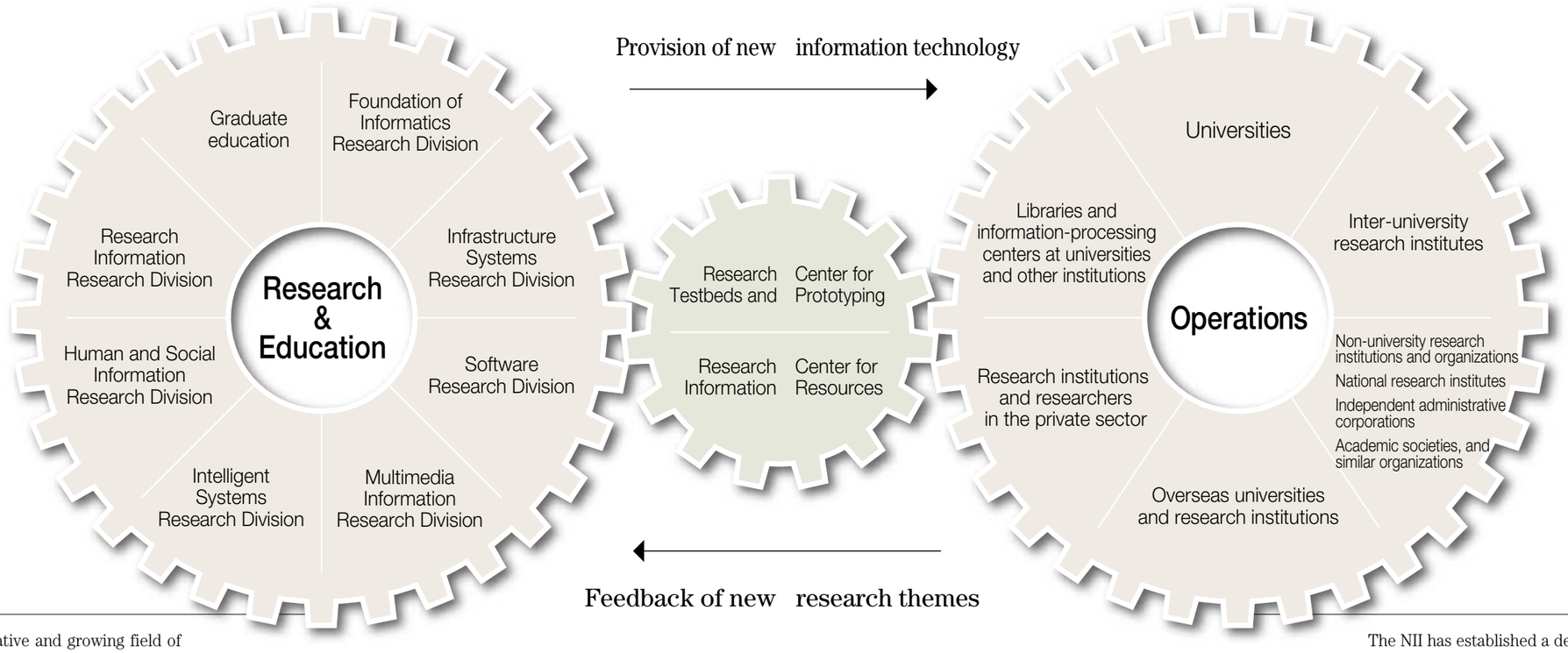
Takamitsu Sawa	Director, Institute of Economic Research, Kyoto University
Eisuke Naito	Professor, Faculty of Sociology, Toyo University

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.
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 a department 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 and leadership in a broad range of fields, providing the solid grounding in advanced informatics.

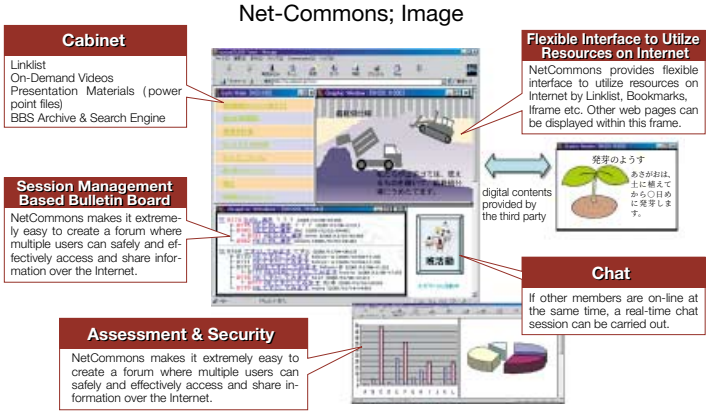
Foundations of Informatics Research

Providing the foundation for the future through basic researches

Net-Commons Project

NetCommons provides everything that is needed for effectively sharing information. Running on the Linux operating system, NetCommons employs the WonderPortlet application server developed by NTT DATA POCKET to combine a web server (Appache), database (PostgreSQL), and authentication system (OpenLDAP). This framework then serves as the basis for various task-specific applications. NetCommons is unique in being a wholly Japanese-developed platform for distance learning and information sharing with universal applicability. An outstanding feature of NetCommons is the member-based bulletin board facility that can be implemented in various formats according to the respective purpose. NetCommons makes it extremely easy to create a forum where multiple users can safely and effectively access and share information over the Internet. This is especially useful for e-learning and similar applications. The information that is being shared on such a forum can be transparently archived, allowing the entire bulletin board to function as database.

Net-Commons; Image



As the name implies, NetCommons is intended as a friendly place on the net where information can be exchanged in a communal setting. We believe that it will help to stimulate civic and educational activities in the age of the Internet.

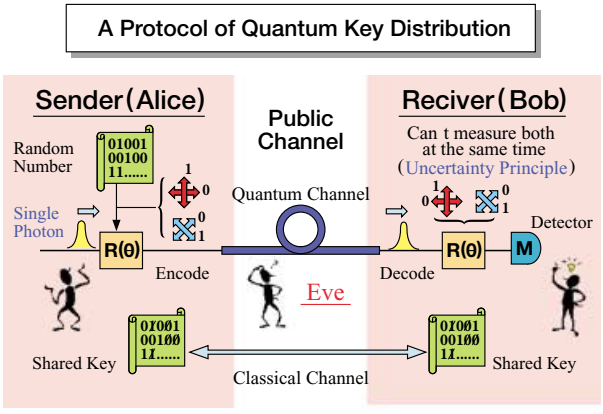
(Noriko Arai)

Quantum computation and Quantum information

Quantum computation and quantum information aim at development of new principle of information sciences based on quantum mechanics. Those theories predicts that quantum information processing are essentially more powerful than conventional information processing. For example, quantum computation can process some kinds of problems, e.g. integer factoring, discrete log, Pell's equations, drastically faster. Quantum cryptography realizes unconditionally secure secret communication, which is otherwise impossible.

Research of implementation of those quantum information processing is also going on. While experiments of quantum computers are not more than test of basic principals, experiments of quantum cryptography are now aiming at commercially feasible technology.

This stimulating research area is a cross-over of leading edge physics and information sciences, and the purpose of the research is not only for application, but also to find a new principles by merging two different fields. The author hope that more young researchers will join this new, exciting and promising area.



(Keiji Matsumoto)

Other researches

- Bioportal project (Fujiyama)
- Iterative solution of large sparse systems of linear equations and least squares problems (Hayami)
- Consequence finding and theory formation (Inoue)
- Software evolution for declarative programming language (Sato)
- Type theory for classical logic (Takita)
- Photonic quantum information systems (Yamamoto)
- Machine learning, semantic web, and bio-text mining (Collier)
- Efficient algorithms for solving large scale optimization problems (Uno)
- Informatics on coordination among speech, gesture and breathing movements within and between individuals (Furuyama)
- Logic with structural expressions for the describing the meaning of information (Kaneiwa)
- Constructive logics and computational complexity (Terui)
- Information processing in brain (Ueki)

Infrastructure Systems Research

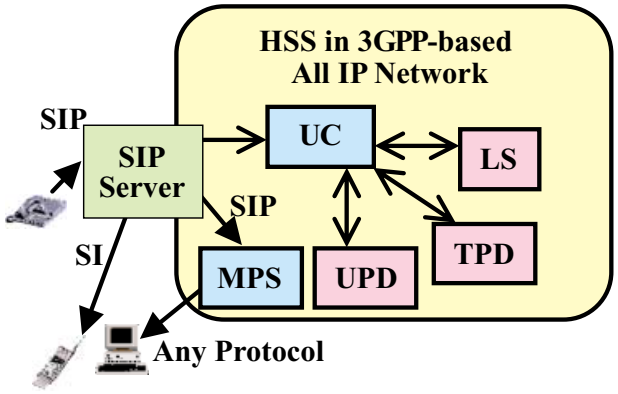
Realize high-performance highly functional networks and computing

Research on ubiquitous computing networks

The networks of the next generation will evolve into a ubiquitous computing network in which an extraordinarily large number of computers work cooperatively in sustaining the social activities of human beings.
We are studying a new type of ubiquitous computing network, shown in the figure, for stress-free and seamless communications, which accepts messages from senders and automatically selects the communication device, and service appropriate for the receiver, converts the message into the form acceptable to the receiver.

(Shigeki Yamada and Eiji Kamioka)

Reference :
E. Kamioka and S. Yamada: Environment-Adaptive Personal Communications Realizing Ubiquitous Computing Networks, IEICE Transactions B, Vol. J85-B, No.5, pp. 755-767 (2002) (in Japanese)

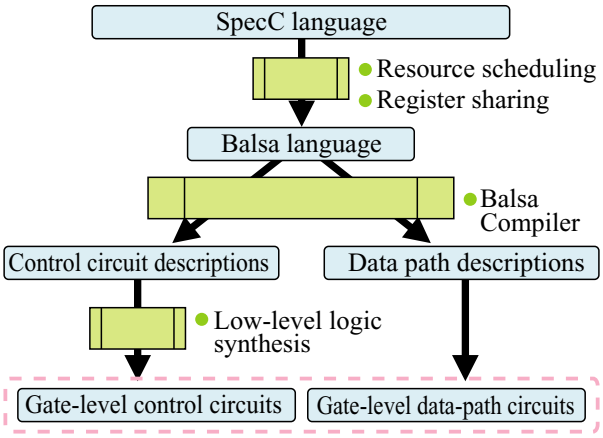


3GPP : 3rd Generation Partnership Project
HSS : Home Subscriber Server
UCN : Universal Communication Navigator
MPS : Media Processing Server
LS : Location Server
TPD : Terminal Profile Database
UPD : User Profile Database

Research on developing a high-level synthesis tool

Various difficulties such as clock skews, high power consumption, and high EMI arise in designing large synchronous circuits. Designing circuits asynchronously without any global clocks has potential for solving these problems. This project aims at developing an efficient methodology to synthesize timed asynchronous circuits from high level specification languages. In particular, we have shown a systematic procedure for translating channel-level models to time Petri net descriptions. Care is taken in this translation to guarantee that there are no state coding violations in the resulting nets, which greatly simplifies the synthesis process. We have also developed a decomposition based synthesis method that can significantly reduce the synthesis cost by handling each output of the target circuit individually. We are now integrating these techniques into an automated high-level synthesis tool which takes the specification language SpecC, performs resource scheduling/allocation, and generates gate-level circuits.

(Tomohiro Yoneda)



Reference :
T. Yoneda, C. Myers, Synthesizing Timed Circuits from High Level Specification Languages, NII Technical Report, NII-2003-003E.
T. Yoneda, H. Onda, and C. Myers, Synthesis of speed independent circuits based on decomposition, Proceedings of the 10th International Symposium on Advanced Research in Asynchronous Circuits and Systems, pp. 135-145 (2004).

Other researches

- Research and Development of control architecture for next generation optical networks (Shoichiro Asano, Takayuki Fujino)
- Researches on QoS 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)
- Network Control Schemes for High Speed Internet (Jun Matsukata)

Software Research

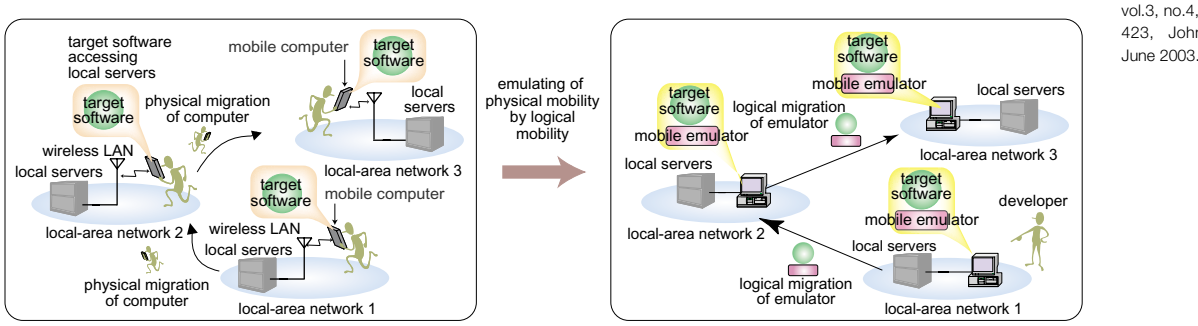
Creating New Concepts for Software

Rapid Development and Testing of Software for Mobile Computers

Advances in wireless networking technology have produced a shift in the nature of mobile computing software. A new class of mobile computing has enabled mobile devices to link up with servers through wireless networks to access location or network-dependent information from these. To construct correct application software, the developer must test it in the environments of all the networks that the device might be connected to. I introduce an approach for emulating the physical mobility and reconnection of a mobile computing device by using the logical mobility of software. The approach provides an application-level emulator for mobile computing devices to solve this problem. Since the emulator is constructed as a mobile agent, it can carry applications across networks on behalf of its target device, and allow the applications to connect to local servers in its current network in the same way as if they had been moved with and executed on the device itself.

(Ichiro Satoh)

Reference :
Ichiro Satoh, "A Testing Framework for Mobile Computing Software", IEEE Transactions on Software Engineering, vol.29, no.12, pp.1112-1121, December 2003.
Ichiro Satoh, "SpatialAgents: Integrating User Mobility and Program Mobility in Ubiquitous Computing Environments", Wireless Communications and Mobile Computing, vol.3, no.4, pp.411-423, John Wiley, June 2003.



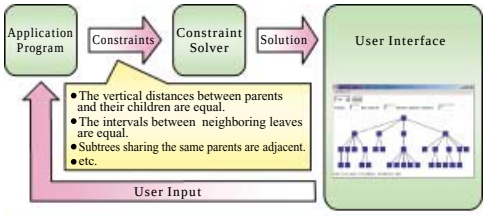
Current approach for testing network-dependent software

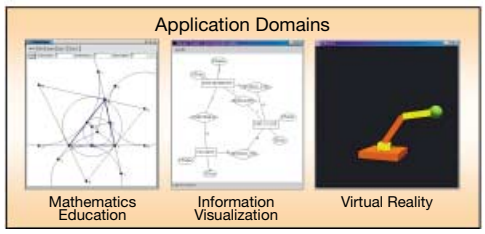
Mobile emulator-based approach for testing network-dependent software

Constraint Programming and Its Application to User Interfaces

We are conducting research on constraint programming, which is a paradigm that enables development of programs by declaratively specifying constraints. With other ordinary programming paradigms, programmers need to write computation procedures to achieve their goals. In contrast, by constraint programming, they only need to write their goals as constraints, letting constraint solvers automatically maintain such constraints, which facilitates development of programs. With a particular interest in the application of constraint programming to user interfaces, we have been studying methods for solving constraints with hierarchical preferences, and have constructed the constraint solvers called HiRise (which processes linear constraints), Chorus (which handles 2D geometric constraints), and Chorus3D (which provides 3D geometric constraints and coordinate transformations).

(Hiroshi Hosobe)





Reference :
Hiroshi Hosobe, "Geometric Constraint Satisfaction for Interactive 3D Applications," in Journal of the IPSJ, Vol. 44, No. 2, pp. 486-495, 2003.
Hiroshi Hosobe, "Hierarchical Nonlinear Constraint Satisfaction," in Proceedings of the 19th Annual ACM Symposium on Applied Computing (SAC'04), pp. 16-20, ACM Press, 2004.

Other researches

- Research on parallel association computation (Akihiko Takano)
- Research on a component-oriented extensible distributed operating system (Katsumi Maruyama, Kazuya Kodama, Soichiro Hidaka, Yusheng Ji, Hiromichi Hashizume)
- Parallel processing environments for non-numeric applications (Soichiro Hidaka)
- Document stream analysis and mining (Atsuhiro Takasu)
- Multimedia archive for creative activities of arts and crafts (Kenro Aihara)

Multimedia Information Research

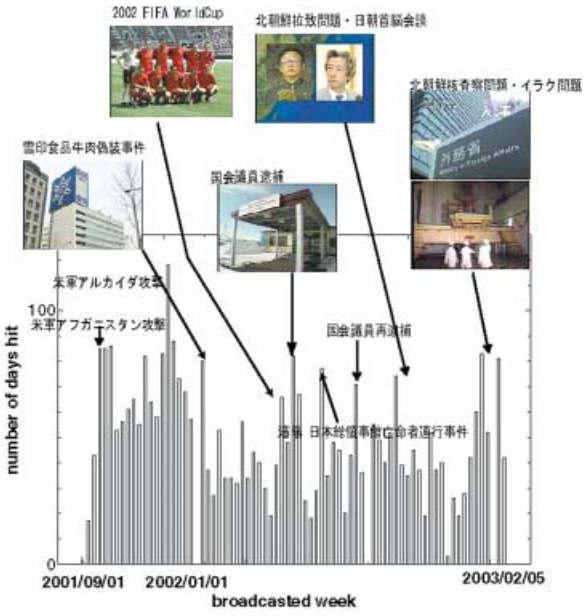
The relations of human and multimedia information

On Mining Broadcast Video Archives

A recent tendency realizing home video servers by digital video broadcasting and personal hard drive video recorders may shortly enable large-scale broadcast video archive systems with thousands hours capacity for personal use. Under such circumstances, knowledge discovery and data mining technologies from video corpus are getting more important which effectively discover truly necessary information for users from the video archives. Based on this idea, our group investivates efficient and effective mining techniques for large-scale video archives. The figure visualises occurrence of important news events with representative frame images as the results of analysis of an eighteen months news video archive.

(Shin'ichi Satoh, Norio Katayama, Hiroshi Mo)

Reference :
Fuminori Yamagishi, Shin'ichi Satoh, and Takashi Hamada, "On Efficient Search of Identical Video Segment for Large-Scale Video Archives," Information Technology Letters, LI-17, pp. 157-158, The First Forum on Information Technology (FIT2002), 2002 (in Japanese).
Shin'ichi Satoh and Norio Katayama, Chapter 27, "Indexing Video Archives: Analyzing, Organizing, and Searching Video Information," in Borko Furht and Oge Marques eds., "Handbook of Video Databases," pp. 651-678, CRC Press, Boca Ratton, Florida, 2003.



Development of multipoint input device (electronic chess board) and its applications

This input device simultaneously reads the places and kinds of the pieces you put on; yes, it functions almost like an electronic chess board. Our team developed it from the scratch, in the need of human/machine interaction research, and is now pursueing the application fields including graphics art and education.

This multipoint input device utilizes RFID (radio frequency identification) tags. The tag technology came to the people's attention recently as the key for ubiquitous communication, but our research is evaluated for giving a new application area to the technology.

(Hiromichi Hashizume)

Reference :
Masanori Sugimoto, Fusako Kusunoki, Hiromichi Hashizume, Design of an Interactive System for Group Learning Support, In Proc. of ACM Conference on Designing Interactive Systems (DIS2002), London, UK, pp.50-55, 2002

Other researches

- Multimedia communication infrastructure: communication network technologies and broadcasting standards (Mitsutoshi Hatori, Weiping Zhao and Eiji Kamioka)
- Digital library and full-text data bases (Jun Adachi and Hiroyuki Kato)
- Research on Traffic Characterization and CoRepresentation, recognition, and modeling of 3D deformable shapes (Hironobu Gotoda)

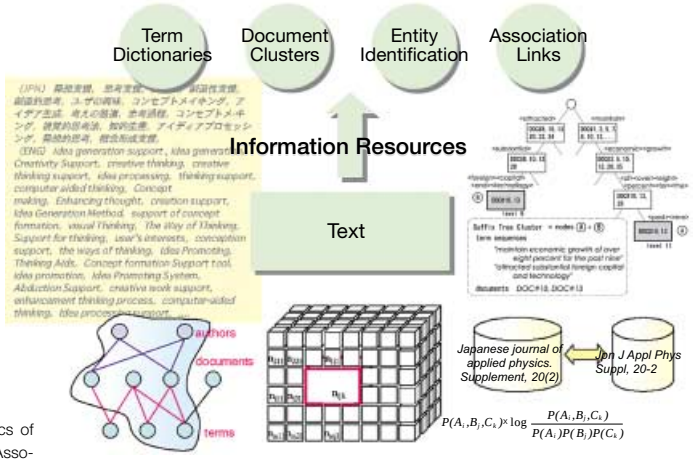
Research on Intelligent Systems

We are developing various systems supporting intelligent activities of human beings

Research on analyzing and utilizing 'text'-based information

'Text' is one of the most basic information media used for character-based information dissemination. In this research, we investigate varieties of approaches for analyzing and extracting knowledge from 'text' and also study methods for enhancing information systems using the extracted knowledge. Targeting to various text sources such as academic papers, newspapers, and Web documents, our research topics include automatic generation of term dictionaries, identification of quoted sentences and/or phrases, document clustering and indexing, and bibliographic and citation record linkage.

(Akiko Aizawa)

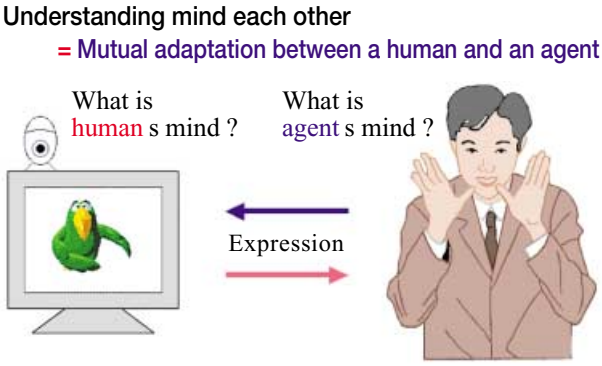


Reference :
Akiko Aizawa: Analysis of Source Identified Text Corpora: Exploring the Statistics of Reused Text and the Authorship, Proceedings of the 41st Annual Meeting of the Association for Computational Linguistics (ACL-03), pp. 383-390 (2003)

Mutual Adaptation between a Human and an Agent

We are studying a human-agent interaction framework in which a user and a life-like agent mutually acquire the other's mind mapping through a mutual mind reading game. Through development of various life-like agents, an internal state (called mind) of an agent like emotion, processing load has been recognized to play an important role in making them believable to a user. For establishing effective and natural communication between an agent and a user, they need to read the other's mind from expressions and we call the mapping from expressions to mind states mind mapping. If an agent and a user don't obtain these mind mappings, they can not utilize behaviors which significantly depend on the other's mind. We formalize such mutual mind reading and propose a framework in which a user and a life-like agent mutually acquire mind mappings each other. In our framework, a user plays a mutual mind reading game with an agent and they gradually learn to read the other's mind. Eventually we implement our framework using a CCD camera and make experiments to investigate its effectiveness.

(Seiji Yamada)



Reference :
T. Yamaguchi, K. Ohnishi, M. Agari, S. Yamada: Estimating a User Model with the Action Sequences in the Mind Reading Game between a Human and a Life-like Agent, 12th IEEE Workshop Robot and Human Interactive Communication (ROMAN 2003) (2003)

Other researches

- Symbiotic robotics research toward co-existing of human and robot (Haruki Ueno)
- Active contents- Contents distribution by mobile agents (Shinichi Honiden)
- Studies on intelligent systems for chemistry with practical use of chemical information and computer (Hiroko Satoh)
- Understanding human intention and activities for versatile real-time human-machine-interactions (Akihiro Sugimoto)

Research on Human and Social Information

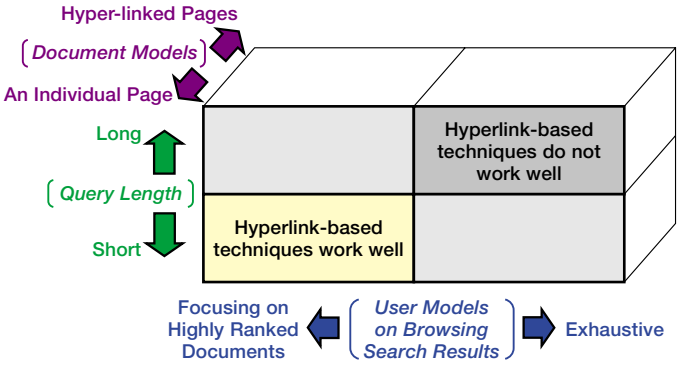
Study the relationship between people and information in society

Research on evaluation methods for Web information access systems

We have developed evaluation models for Web information access systems using test collections, considering various features of the Web such as the hyperlink structure. The Web provides information in all areas of human endeavor. Web information access systems such as search engines provide the necessary means to access the information on the Web. However, effectiveness evaluation of such systems has been far from easy for some technical reasons. Evaluation workshops and test collections are the most likely solution to the above-mentioned problems, but should be suitable for the Web.

We have observed that the search techniques considering hyperlink structure performed effectively using short queries within highly ranked documents.

(Koji Eguchi, Keizo Oyama, Noriko Kando)

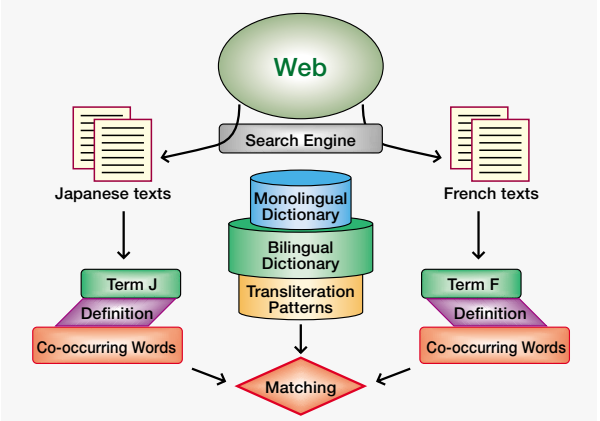


Reference:
Eguchi, K., Oyama, K., Ishida, E., Kando, N., and Kuriyama K., "Evaluation Methods for Web Retrieval Tasks Considering Hyperlink Structure", IEICE Trans. Inf.& Syst. Vol.E86-D, No.9, pp.1804-1813 (Sep. 2003).

Extracting Translation Pairs from the Web

Currently, many languages are being used around us reflecting the development of communication and transportation facilities. And with the rapid change of society, many words are being born. We are studying the method for creating the bilingual dictionaries which are useful in these multilingual societies. More concretely, we are developing the method for extracting translation pairs of newly-coined words, special terms and proper names from the Web which is being updated daily and contains new information. The following figure represents the flow of our method for extracting Japanese-French translation pairs from the Web. First, we input Japanese words and their French translations to the existing search engine and obtain the related texts in both languages. Next, we extract the co-occuring words and definitions of target words and then extract the translation pairs based on the dictionaries and transliteration patterns of Katakana characters and alphabets. We are now solving the technical problem of effectively finding bilingual texts which contain translation pairs and identifying the bilingually corresponding units.

(Keita Tsuji, Kyo Kageura, Teruo Koyama)



● The Flow of Extracting Translation Pairs from the Web
Web is a useful resource for extracting translation pairs which are not listed in existing dictionaries.

Reference :
Keita Tsuji, Beatrice Daille and Kyo Kageura,"Extracting French-Japanese Word Pairs from Bilingual Corpora based on Transliteration Rules", Proceedings of the Third International Conference on Language Resources and Evaluation, 2002, pp.499-502.

Other researches

- Knowledge representation and use (Teruo Koyama)
- Research on a method for associating researchers' information databases with the Web. (Keizo Oyama)
- Relationships between ICT (information and communication technology) and the social system (Yoh'ichi Tohkura)
- Evaluation of information access technologies (Noriko Kando)
- Research on the dynamics of terminology (Kyo Kageura)
- Building a Weblog Site for Online Law Information (Hitoshi Okada)
- User-adaptive information access methods (Koji Eguchi)
- Research on the Lifespan of Newly-coined Words in Special Domains (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

Bibliometric Research based on Citation Database for Japanese Papers

In recent development of Japanese universities' reformation, research evaluation has rapidly become a hot topic. By using citation index databases, number of publications and their citations can be calculated, which could be used as an index of research level. As the Impact Factors derived from Science Citation Index database by ISI is especially getting popular, their improper use is often pointed out. NII is constructing a Citation Database for Japanese Papers (CJP) with a wide coverage of Japanese academic journals both in Japanese and English. Statistical analyses based on CJP are carried out as well. Table in the right lists highly cited journals in CJP database showing its Impact Factors (IF) for Japanese society journals including those in Japanese language for the first time. We will carry on bibliometric research further more in parellel with enrichment of the database.

(Masamitsu Negishi, Yuan Sun)

A trial Impact Factors calculation for NII CJP database source journals

Journal (J: in Japanese; E: in English)	N of papers (98-99)	Times cited from papers (2000)	Self-citations	IF
Journal of the Geological Society of Japan (J)	178	137	45	0.77
Journal of the Iron and Steel Institute of Japan (J)	289	180	60	0.62
Japanese Journal of Applied Physics. Pt. 2: Letters (Japan Society of Applied Physics) (E)	959	565	159	0.59
Journal of the Acoustical Society of Japan (J)	242	122	26	0.50
Journal of the Society of Naval Architects of Japan (J)	281	137	70	0.49
Journal of Magnetics Society of Japan (J)	785	371	224	0.47
Journal of the Robotics Society of Japan (J)	397	182	79	0.46
ISIJ International (Iron and Steel Institute of Japan) (E)	361	160	82	0.44
Proceedings of Annual Conference (Japan Concrete Institute) (J)	1100	463	337	0.42
Journal of the Japan Society of Powder and Powder Metallurgy (J)	423	176	120	0.42
Japan Analyst (Japan Society for Analytical Chemistry) (J)	294	122	56	0.42
CAJ Proceedings of Cement & Concrete (Japan Cement Association) (J)	308	123	59	0.40
Journal of the Japan Society of Precision Engineering (J)	640	249	130	0.39
Transactions of Information Processing Society of Japan (J)	792	291	116	0.37
Japanese Journal of Applied Physics. Pt. 1: Regular Papers & Short Notes (Japan Society of Applied Physics) (E)	3037	1087	646	0.36
Bioscience, Biotechnology and Biochemistry (Japan Society for Bioscience, Biotechnology, and Agrochemistry) (E)	952	347	186	0.36
Journal of the Ceramic Society of Japan (J)	493	178	99	0.36
City Planning Review. Special issue: Papers on City Planning (City Planning Institute of Japan) (J)	309	111	72	0.36
Chemical & Pharmaceutical Bulletin (Pharmaceutical Society of Japan) (E)	752	257	209	0.34
Analytical sciences: the international journal of the Japan Society for Analytical Chemistry (E)	504	166	79	0.33

Reference :
M. Negishi, Y. Sun, K. Shigi, "Citation database for Japanese papers: a new bibliometric tool for Japanese academic society", Proceedings of the 9th International Conference on Scientometrics and Informetrics: ISSI2003, edited by G. Jiang; R. Rousseau & Y. Wu, pp.208-220, Dalian University Technology Press, Dalian, China, August 2003. (Also to appear in Scientometrics, Vol.60, No.3, pp.333-351, 2004)
M. Negishi, Y. Sun, "Measuring of the relationship among the Japanese academic societies based on citation data from the CJP database", Proceedings of the 11th Annual Conference of the Japan Society of Information and Knowledge, pp.5-8, 2003.

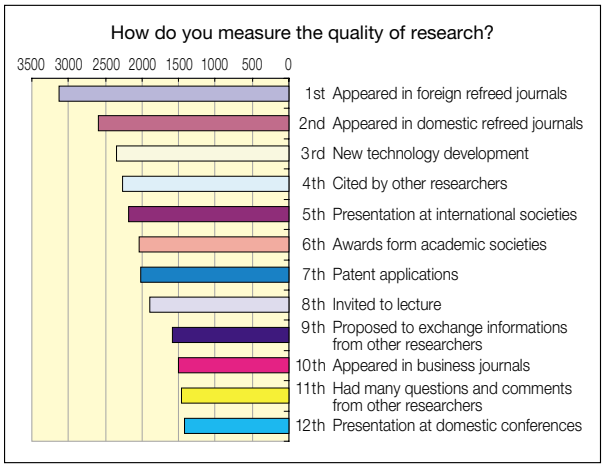
Research on characteristics and distinctions of creative research teams

We extracted researchers in field of informatics and sent them questionnaires on research activities, one question of which was "How do you measure the qualification of creative researches?" The researchers ranked twelve items from 0 to 10 points. The summation of each item is indicated in the figure.

The highest-scored item was "Appeared in foreign refereed journals," and lowest-scored item was " Presentation at domestic conferences."

We shall improve the research on creative persons and teams in R & D activities.

(Masaharu Yano, Morio Shibayama)



Reference :
Shibayama, M & M. Yano "R&D Activities in Japanese Companies and Universities," Creativity and Innovation: Cross-Cultural Innovation, Dutch Universitat Verlag 2004 (in press)

Other researches

- International comparison of research systems (Masaki Nishizawa, Yuan Sun)
- Research on industry-university cooperation by patent applications (Masaharu Yano, Morio Shibayama)
- Investigation study on network structure of information sciences related research and its trends (Masaki Nishizawa, Yuan Sun)

Current Research Topics of Research Staff of NII

Foundation of Informatics Research Division

Noriko Arai	● Propositional proof complexity ● System development for distance learning ● Learning community through problem-solving discussion
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, logistics, and vehicle routing problems.
Ken Kaneiwa	● A study on ontology-oriented logical reasoning systems ● A study on logic with structural expressions for the describing the meaning of information
Nigel Collier	● Machine learning for semantic annotation of Web pages ● Information extraction ● Ontology engineering ● Biotechnology text mining
Ken Satoh	● Construction of multiagent systems with speculative computation ● Software evolution for declarative programming
Hideaki Sugawara	● Exploration of interoperability and knowledge dicovery in biological information resources
Makoto Tatsuta	● Type theory for classical logic ● Strong normalization of permutative conversions
Kazushige Terui	● Constructive logics and computational complexity ● Proof theory and semantics of linear logic
Ken Hayami	● Numerical Analysis : Application of iterative methods (GMRES: Genralized Minimum Residual Method) to singular linear systems and least squares problems. ● Numerical solution of systems of algebraic equations arising in MEG (MagnetoEnthelophaloGraphy).
Nobuhiro Furuyama	● A study on information that ecologically constrains the coordination among speech, gesture and breathing movements within and between indivisuals
Peter van Loock	● quantum information, quantum optics ● quantum networks, quantum solitons ● linear optics quantum information processing
Keiji Matsumoto	● Quantum information and computation
Yoshihisa Yamamoto	● Photonic quantum information systems ● Solid state NMR quantum computation

Infrastructure Systems Research Division

Shoichiro Asano	● Development of full optical network architecture ● Development of photonic router ● Research on autonomous distributed network control
Shunji Abe	● Researches on QoS control and dimensioning of the Internet ● Researches on photonic network architecture ● Researches on next generation information networks
Asanobu Kitamoto	● Image analysis and synthesis ● Data mining of large-scale scientific image databases ● Application of image data mining to meteorology and bioinformatics
Noboru Sonehara	● Digital Content Commerce (d-Commerce) System ● Intellectual Property Rights Securitization 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	● Research on improvement of the function and reliability of high-speed network ● Research on network measurement and application to the improvement of security
Soichiro Hidaka	● Parallel processing environments for non-numeric applications ● Extensible and distributed operating systems ● Optimization based on redundant communication elimination in querying XML documents
Takayuki Fujino	● Research on policy-based network control architecture ● Research on photonic network architecture
Jun Matsukata	● Analysis and operation of peer models for fast communications over the 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 ubiquitous and context-aware computing networks ● Research on Privacy Protection Technologies
Susumu Yoneda	● Traffic Control and Congestion Control in IP, MPLS or Ether based Network
Tomohiro Yoneda	● High-Level Synthesis of Asynchronous Circuits ● Formal Verification of Real-Time Software
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	● Heterogeneous content processing ● High-performance information retrieval system based on the relevance superimposition model ● Grouping methods of WWW contents by link analysis
Frederic Andres	● Multilingual lexical database ● Geomedia ● Research in Digital Silk Roads and image-learning ontologies
Kazuhiko Kato	● Secure software circulation system for open network environments ● Software infrastructure for autonomic federated computing systems
Hiroyuki Kato	● Optimization for casual queries to databases ● Fundamental issues on optimizing queries to XML databases
Noriko Kando	● Evaluation of information access technologies ● Text structure, genre, citation and link analysis, and their application for enhanced information access ● Cross-lingual information access systems ● Value-Added Information Access Systems
Yusheng Ji	● Research on providing the quality of service 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	● EResearch 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, Web Service, Operating System
Shin Nakajima	● Formal Specification and Verification of Software (Application to Web Service and Embedded Systems)
Satoshi Matsuoka	● Autonomously Configuring Grid Middleware Systems
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 the multimedia information retrieval ● Research on large-scale video archive systems
Makoto Kanazawa	● Investigation of formal properties of grammar formalisms based on proof theory ● Logical semantics of natural language
Toshiro Kamiuchi	● Digital Silk Roads Project ● Research and development on data base by advanced technology ● Personnel training for digital archives
Eiji Kamioka	● Study on Ubiquitous Computing Networks ● Study on Context-Aware Information Networks
Shin'ichi Satoh	● A study on video analysis, retrieval, and knowledge discovery based on broadcast video archives ● A study on image retrieval
Yuichi Nakamura	● Multimedia contents production by automated video capturing and editing ● Integration of image, audio, and language processing for the analysis of video-based media ● 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
Takeo Yamamoto	● Human interface of information systems ● Digital archiving of multimedia information
Intelligent Systems Research Division	
Ryutaro Ichise	● Machine learning for relational knowledge ● Knowledge Symbiosis ● Data mining with medical data
Haruki Ueno	● Symbiotic robotics research toward co-existing of human and robot ● Development of distance learning platform WebLS for higher education ● Research of smart information retrieval system with functions of association and learning for a mobile terminal
Hiroko Satoh	● Computer-aided chemical reaction prediction study ● Computer-aided NMR chemical shift prediction study
Yoshiaki Shirai	● Gesture and sign language recognition ● Multi-modal interaction for service robots
Akihiro Sugimoto	● Understanding human intention and activities for versatile real-time human-machine-interactions ● Recognition of Hand-Held Object by Wearable Vision Sensor ● Computer Vision under the Existence of Quantization Errors
Shinichi Honiden	● Agent oriented software engineering ● Agent architecture ● Advanced agent application
Tomoko Matsui	● Speech and Speaker Recognition ● Discriminative Prediction for Multimedia Data
Tsuyoshi Murata	● Web mining and Web community discovery ● Discovery systems for plane geometry ● Diagrammatic reasoning systems
Seiji Yamada	● Computational intelligence, mutual adaptation between a human and an agent, intelligent information gathering in the WWW.

Human and Social Information Research Division

Kouichirou Ueki	● Development of next generation human interface
Koji Eguchi	● Study on adaptive information access methods ● Study on evaluation models for Web search systems ● Study on Web information organization
Keizo Oyama	● Research on an integrated platform for various digital contents ● Research on Web retrieval systems and their evaluation ● Research on fulltext search technology
Hitoshi Okada	● Research on System Platform Construction of Electronic Commerce ● Country-by-country Comparison Research on Mobile Commerce ● Research on Money Circulation for Remote Areas by Regional Electronic Currency System ● Building a Weblog Site for Online Law Information
Kyo Kageura	● Research on the dynamics of terminology ● Research on the extraction of multilingual terminology ● Research on the relationships between media structure and information management
Hironobu Gotoda	● Image-based modeling and simulation of 3D objects ● Similarity search for 3D models
Teruo Koyama	● Term extraction from text corpora ● Structurization of terms ● Structure analysis of compsit terms ● Knowledge representation and use
Keita Tsuji	● Research on the Lifespan of Newly-coined Words in Special Domains
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	● Comparative study on information science research activities in Japan and the United States ● Investigation study on network structure of information sciences related research and its trends ● Bibliometric analysis of research activity in Japanese university
Akira Miyazawa	● Union Catalogue Database ● Link of Webcat and Chinese traditional book catalogue database ● Character codes ● D:data processing utilities

Research Information Research Division

Masahiro Kohara	● Relations between information and the international community, a state, an organization, and an individual in the age of globalization ● Japan's opening-up in Asia and the role of information
Morio Shibayama	● Research on measuring research trends and research assessment ● Statistical study on change of research environment ● Study on identifing creativity in R & D activities
Yuan Sun	● Research on research assessment and creativity ● Investigation of informatics related fields based on bibliometric methods ● Differential item/person functioning
Masamitsu Negishi	● Research on trends of technology and businesses of databases, electronic libraries and electronic journals in the recent developments of information and telecommunication technologies ● Bibliometric research for measuring research levels and identifying research trends
Asao Fujiyama	● Bioinformatics on comparative primate genome studies
Masaharu Yano	● Research on characteristics and distinctions of creative reserchers ● Research on university-industry cooperation by patent application

Research Center for Testbeds and Prototyping

Henri Angelino	● Science Policy, International Cooperation in Higher Education,Comparison of Technology Transfer
Masashi Inoue	● Learning from multiple information sources ● Cross-media information retrieval ● Information utilization behavior
Naohiko Uramoto	● Text mining middleware for Healthcare and Life Sciences ● XML and metadata
Shigeo Urushidani	● Research on next generation network architecture and protocol ● Research on next generation system architecture
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	● Study on approximate matching model ● Study on document stream analysis
Hideaki Takeda	● Knowldge 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 ● Empirical 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 user interfaces ● Theory and solution of hierarchical/physically-based constraint systems
Yasuhiko Yasuda	● Image Retrieval System Employing Relevance Feedback ● Highly Efficient Motion Image Coding ● Content Delivery Network ● Adhoc Radio Network ● Virtual Space Sharing System Including the Sense of Touch Feedback
Hironori Washizaki	● Component-based Software Development, Pattern-Oriented Software Development, Software Metrics

Research Center for Information Resources

Akiko Aizawa	● Cluster-based indexing and text mining ● Soft-computing approach to information retrieval ● Graph-based methods for automatic generation of linguistic resources
Takashi Koga	● Legal, institutional and policy research concerning access to government information
Keiko Watanabe	● Research on the impact of e-Learning on existing educational system ● Educational Administration and Finance

Center for Grid Research and Development

Hitohide Usami	● A study on PSE (Problem Solving Environment) in Scientific Grid.

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

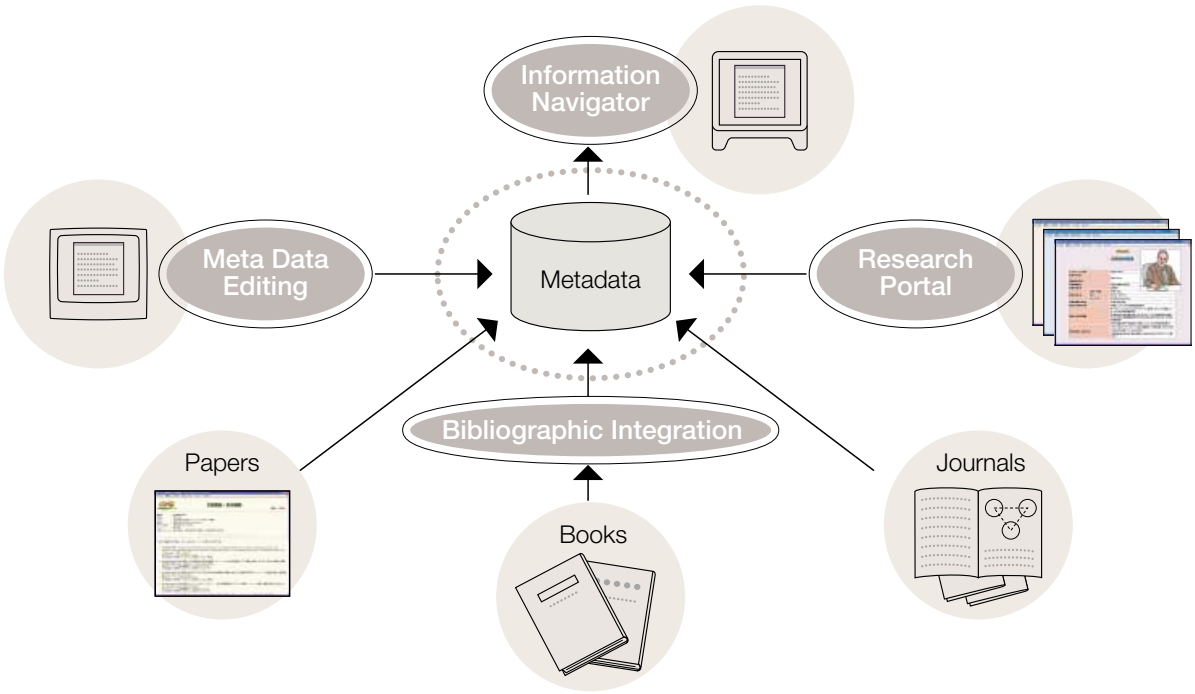
Mission of RCTP

The Research Center for Testbeds and Prototyping carries out empirical research from a range of perspectives across research divisions and research center to bridge the gaps between the social needs and fundamental researches.

Empirical research on integration of heterogeneous databases

The Center is conducting the research project for identifying and linking information among independently produced resources including databases and web data on papers, books, researchers and research projects to enhance the accessibility to information resources. This project applies various kinds of technologies such as document processing, database system, natural language processing, machine learning, information visualization developed at NII.

Reference :
A.Takasu,"Bibliographic Attribute Extraction from Erroneous References Based on a Statistical Model", 3rd ACM & IEEE Joint Conf. on Digital Libraries, pp.49-60, 2003.



Research Projects

Visualization Interface for NII Article Information Navigator :

To search for articles related to a particular subject, researchers are often required to follow the citation links starting from well-known articles, or search some bibliographic databases based on the similarity of titles and keywords. We are developing an article navigator with a visualization interface that facilitates these tasks.

Citation Linkage and Integration :

This research aims to find identical bibliographic information in various resources based on an approximate record matching technique.

Research Portal Project :

This project aims to support researchers to find related people and topics by analyzing conference programs, attendance information, and personal networks.

Editing and Publishing System for Researcher's Personal Data :

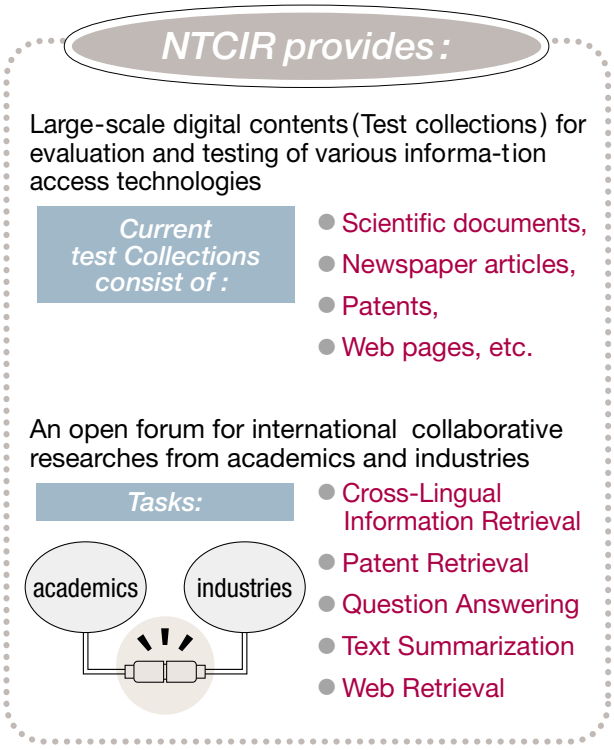
It is important for disseminating scholarly information to construct uniform information allowing variety of contents. We have been developing a tool for individual researchers to construct personal information efficiently using a XML technology.

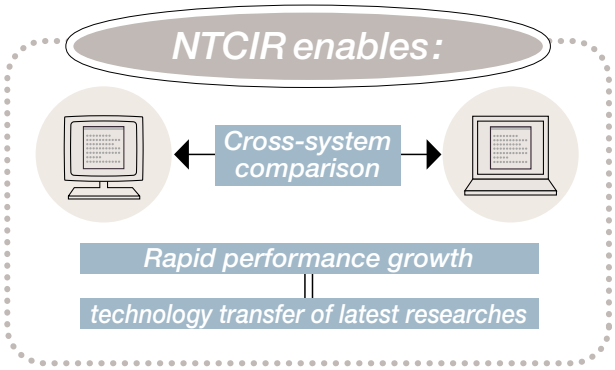
Research Center for Information Resources

Resources for informatics research

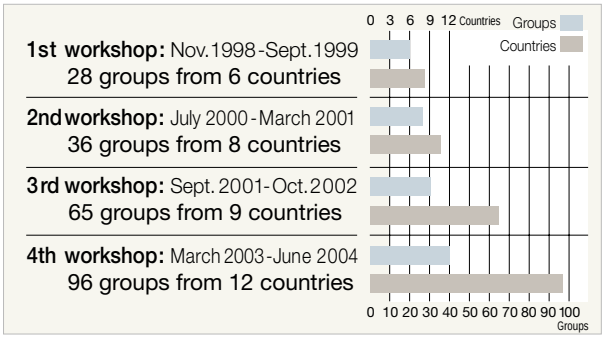
Center's Mission and NTCIR

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.





NTCIR Participants



Other Projects at RCIR

Mono Project: Development and Utilization of Multimedia Archives on Artistic Activities

In collaboration with universities, the Center is conducting research on systems for constructing digital archives containing various information relating to arts and crafts. The archive incorporates not only high-quality work images and videos, but text description and interview with creators.

Advanced Analysis of Video Data

This project is jointly conducted with the Pattern Recognition and Media Understanding Technical Group of the Institute of Electronics, Information and Communication Engineers (IEICE) through the working group activity on a video database for evaluation. The aim of the project is to advance video processing technology through producing and distributing the video test collection with metadata.

Compilation and Evaluation of Language Corpus for Research on Natural Languages

This project looks at appropriate syntax units to produce a basic Japanese language corpus that can be of use in compound word processing, and syntax studies and lexicology. The Center has been conducting tests on automatic extraction of technical terms in cooperation with several companies and universities using preliminary data since 1999. The research reports are published in the special issue of "Terminology" (Vol.6 No.2).

Graduate Education Activities

The NII provides graduate education under the three main formats 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 the 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) Acceptance of research students for special collaboration
(3) Cooperative graduate universities

Department of Informatics, The Graduate University for Advanced Studies

Establishment of the Department

The NII joined the Graduate University for Advanced Studies (Sokendai, in Japanese) in April 2002, and established the Department of Informatics (latter part of Ph.D. programs). Sokendai is strictly a graduate university with 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 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 42 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 in this course.

In the classroom at the NII

Student study room at the NII

Enrollment (as of April 2004)

( ) Overseas student among total

Admission fiscal year		General Course	International Course	Total
From 2001	April	14 (1)	———	20 (6)
	October	1 (0)	5 (5)	
From 2003	April	15 (6)	———	22 (11)
	October	3 (1)	4 (4)	
From 2004	April	8 (4)	———	8 (4)
Total		41 (12)	9 (9)	50 (21)

Background of the students of 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, Nagoya University Kyoto University, Kobe University Hiroshima University Nara Institute of Science and Technology Keio University, Shibaura Institute of Technology Seijo University, Tokyo Denki University Tokyo University of Science, Nihon University Waseda University, Doshisha University
China	East China Normal University Harbin Institute of Technology Tsinghua University The University of Electronic Science and Technology University of Science and Technology of China
Thailand	Kasetsart University
South Korea	Seoul National University
Iran	Tehran University
Vietnam	University of Natural Science
Bangladesh	Dhaka University
France	Ecole Supérieure Angevine d'Informatique et de Productique Institut des Sciences et Techniques de l'Ingenieur d'Angers Universite de Savoie
Germany	University of Leipzig University of Stuttgart
Britain	University of Wales
USA	Yale University
Other	Asian Institute of Technology

Special Collaboration 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 the research staff of NII.

Universities which research students for special collaboration belong to. (as of April 2004)

University / Graduate School
The University of Tokyo / Graduate School of Interdisciplinary Information Studies, Interfaculty Initiative in Information Studies
Tokyo Institute of Technology / Interdisciplinary Graduate School of Science and Engineering
The University of Electro-Communications / Graduate School of Information Systems
Kobe University / Graduate School of Science and Technology
Waseda University / Science and Engineering

Cooperative Graduate Universities

NII actively cooperates with the graduate university of Tokyo and Tokyo Institute of Technology and 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 ~
Tokyo Institute of Technology / Interdisciplinary Graduate School of Science and Engineering	FY2003 ~

The number of students from other universities for special collaboration or cooperation between graduate universities is as in a right table.

Students from other universities (as of April 2004)

Master Course	Ph.D. Course	Total
23	14	37

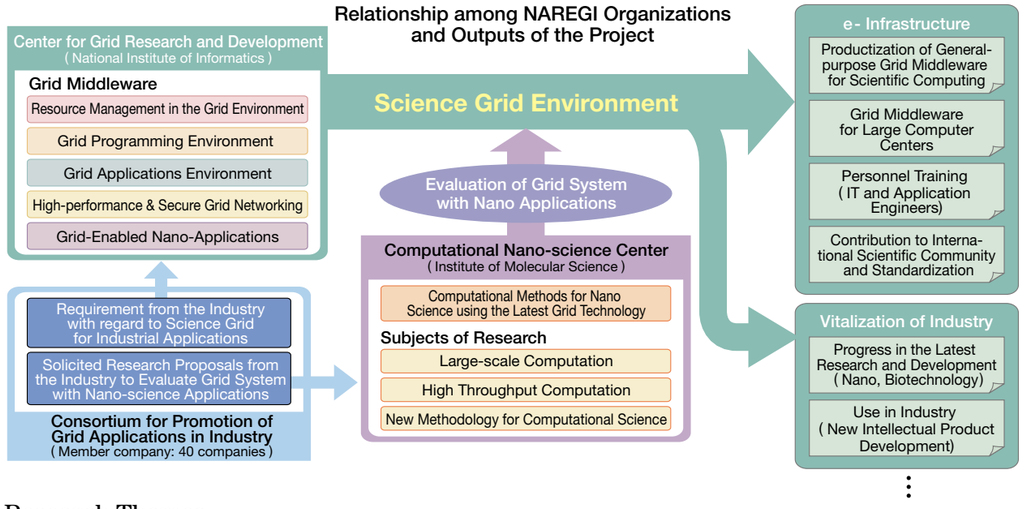
Contact : Research Cooperation Division, Graduate School Section
TEL.03-4212-2110 FAX.03-4212-2120 E-mail : daigakuin@nii.ac.jp

National Research Grid Initiative (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

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

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

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.

High-Performance & Secure Grid Networking

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

Research subjects

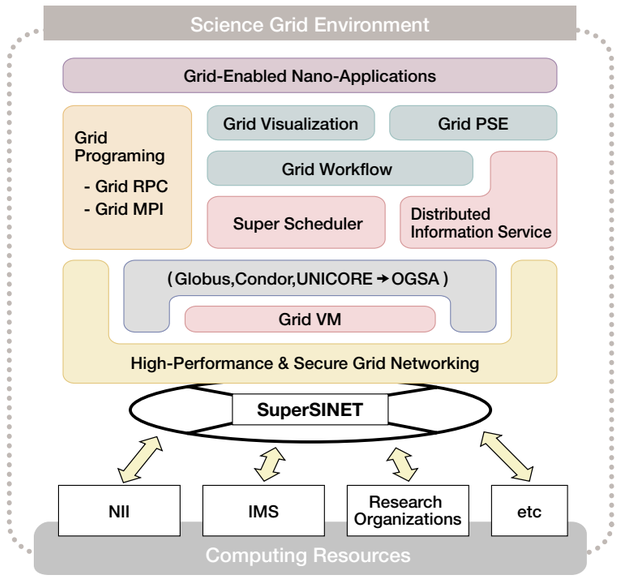
With regard to network function infrastructure for grid computing, NAREGI is conducting research and development on the control technology, enabling determination of the optimal route based on the network traffic measurement as well as to establish multiple alternative routes as backup. Work is also 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

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
TEL.03-4212-2857 FAX.03-4212-2803 E-mail : office@grid.nii.ac.jp

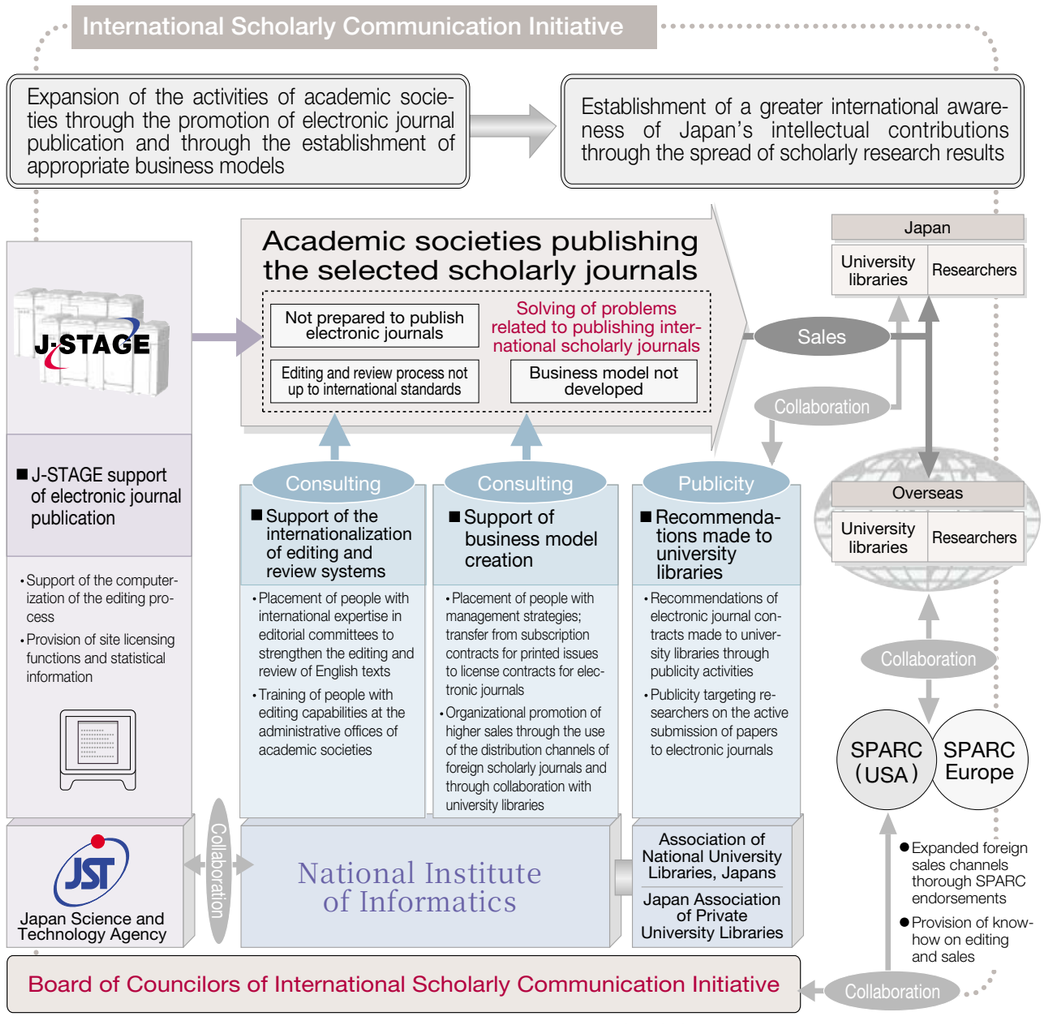
International Scholarly Communication Initiative

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.



*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.

In 2003, the NII selected 21 issues of English-language scholarly journals from 16 institutes.

Three 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 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. Academic Societies of Physics have developed an e-journal business model and discussed current and future perspectives for the e-journals of Japanese academic societies at the ICOLC (International Coalition of Library Consortia) which held in the U.S.A. among representatives of university libraries from all over the world. 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.

■ Selected journals in 2003

Title	Publisher
Monumenta Nipponica	Monumenta Nipponica, Sophia University
Kodai Mathematical Journal	Department of Mathematics Tokyo Institute of Technology
Tohoku Mathematical Journal	Mathematical Institute, Tohoku University
Japanese Journal of Applied Physics (JJAP)	The Institute of Pure and Applied Physics (IPAP)
Journal of the Physical Society of Japan (JPSJ)	
Analytical Sciences	The Japan Society for Analytical Chemistry
Journal of Chemical Engineering of Japan	The Society of Chemical Engineers, Japan
Polymer Journal	The Society of Polymer Science, Japan (SPSJ)
Journal of Bioscience and Bioengineering	The Society for Biotechnology, Japan
Journal of Mammalian Ova Research	The Japanese Society of Mammalian Ova Research (JSMOR)
Mammal Study	The Mammalogical Society of Japan
Zoological Science	The Zoological Society of Japan (ZSJ)
JSME International Journal	The Japan Society of Mechanical Engineers
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 (ELEX)	
Materials Transactions	The Japan Institute of Metals (JIM)
The Japanese Journal of Physiology	The Physiological Society of Japan
Cancer Science	The Japanese Cancer Association

[21 titles / 16 publishers]

Contact : Contents Division, Scholarly Communication Section
TEL.03-4212-2360 FAX.03-4212-2375 E-mail : 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.A. and GÉANT*2 in Europe to facilitate the international dissemination of research information and to promote collaboration with research networks overseas.
Focusing on the support of advanced research projects within Japan, Super SINET came into operation in January 2002.

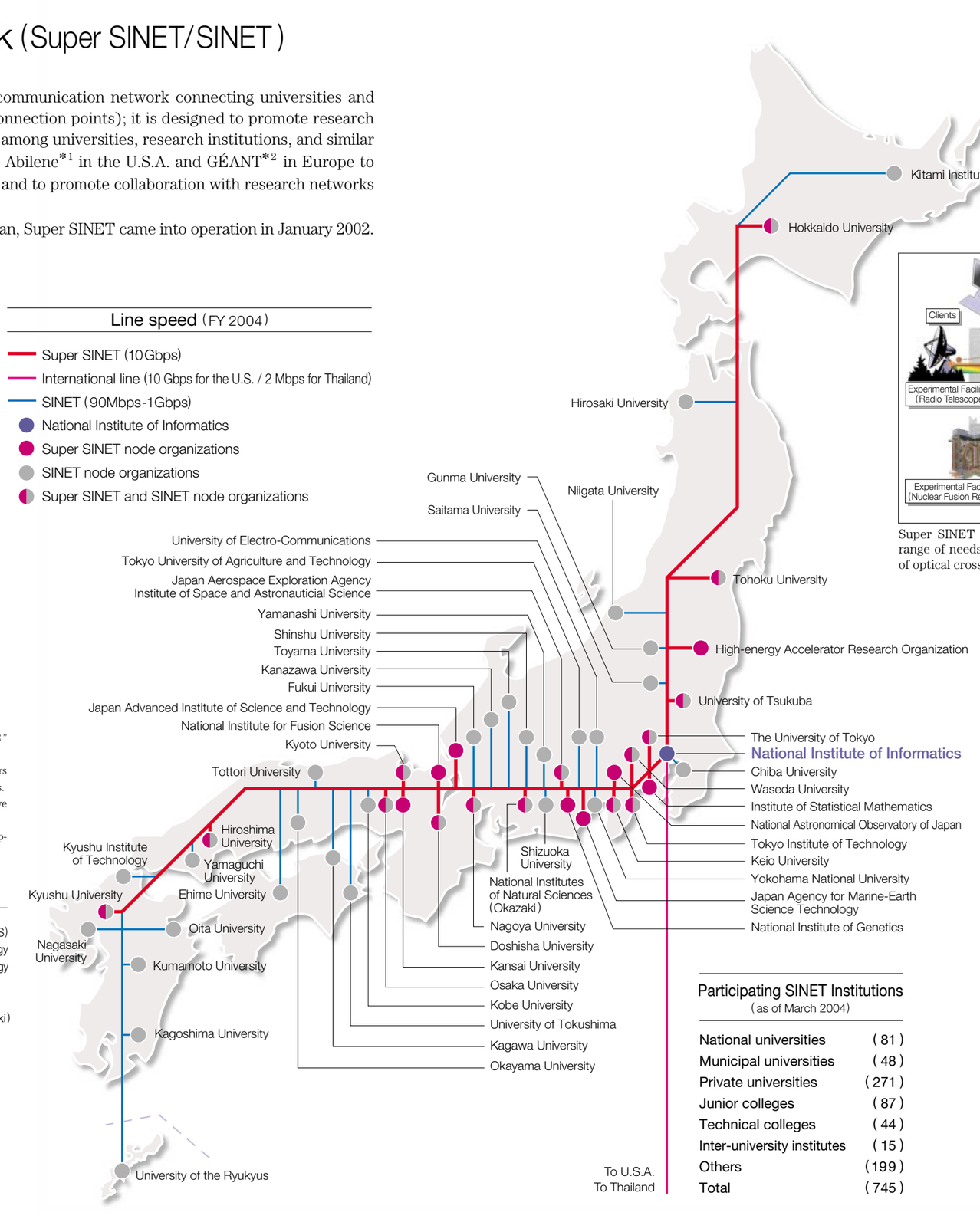
Super SINET

Super SINET is one of the world's most advanced and fastest high-speed networks dedicated to the support of research activities; the network is comprised of optical cross-connects (OXC), wave length division multiplexing (WDM) systems, and ultrahigh-speed routers, among other components.
This innovative infrastructure was designed to support advanced research projects involving enormous volumes of data that world be nearly impossible to handle within conventional network environments. Super SINET provides the high speed network environment of up to 10 Gbps to academic research institutions, e.g. universities, participating in research projects in ultahigh-speed network-dependent research fields such as high energy science, nuclear fusion science, space science, astronomical science, genome analysis (bioinformatics), and nano-technology, as well as in research projects on GRID computing which interlocks many supercomputers in distributed locations. NAREGI*3, an NII research project, is building their research GRID environment on top of Super SINET. ITBL*4, another distributed computing project, is also carried out using Super SINET.
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 "Internet 2" and involves more than 190 participating universities and research institutes across the U.S.
*2 GÉANT is a pan-European research network established by the EC as a policy initiative, and covers more than 3,000 participating research and educational organizations across more than 30 countries.
*3 NAREGI (National Research GRID Initiative) is a industry-government- academia collaborative project on GRID computing.
*4 ITBL (IT-Based Laboratory) is a project begun in fiscal 2001 with the aim of realizing a virtual cooperative research environment based on information technology (IT).

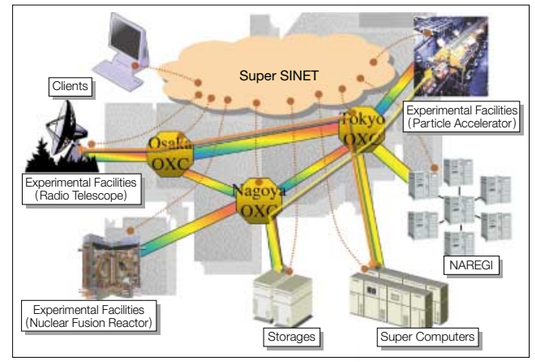
Nodes of Super SINET

- 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 Mathematics
- National Astronomical Observatory, Japan (NAOJ)
- Waseda University
- Keio University
- Japan Aerospace Exploration Agency Institute of Space and Astronautical Science (ISAS)
- Japan Agency for Marine-Earth Science Technology
- Japan Advanced Institute of Science and Technology
- National Institute of Genetics (NIG)
- National Institute for Fusion Science (NIFS)
- National Institutes of Natural Sciences (Okazaki)
- Nagoya University
- Kyoto University
- Institute for Chemical Research, Kyoto University
- Doshisha University
- Osaka University
- Kansai University
- Hiroshima University
- Kyushu University
- National Institute of Informatics (NII)
- NII Chiba Annex

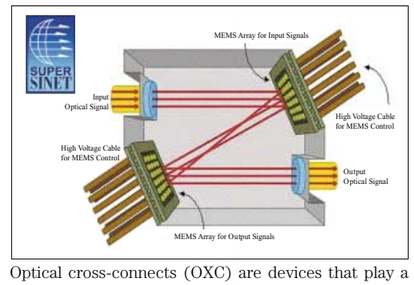


Participating SINET Institutions
(as of March 2004)

National universities	(81)
Municipal universities	(48)
Private universities	(271)
Junior colleges	(87)
Technical colleges	(44)
Inter-university institutes	(15)
Others	(199)
Total	(745)

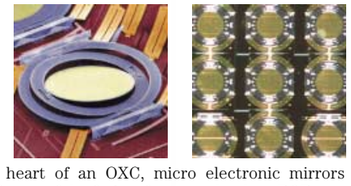


Super SINET is designed as a network that can adapt flexibly to a range of needs of various advanced research projects through the use of optical cross-connects (OXC).



Optical cross-connects (OXC) are devices that play a core role in optical network control; these devices change the network composition flexibly by switching the paths of optical signals among optical fibers.

Left : Micro electronic mirrors, Right : Switch element



At the heart of an OXC, micro electronic mirrors (MEMs), one of the fruits of nano technology R&D, are used. Switching is performed by moving the micro mirrors around the axis across the two supporting points. Two hundred and fifty six mirrors can be integrated into a 6 cm^2 chip.

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

Catalog Information Service

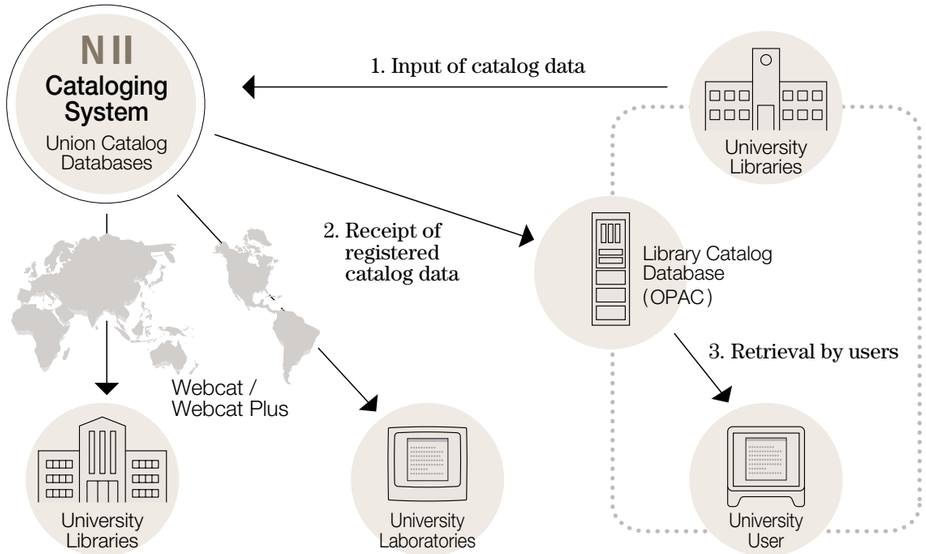
http://www.nii.ac.jp/CAT-ILL/contents-e/e_home.html

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.

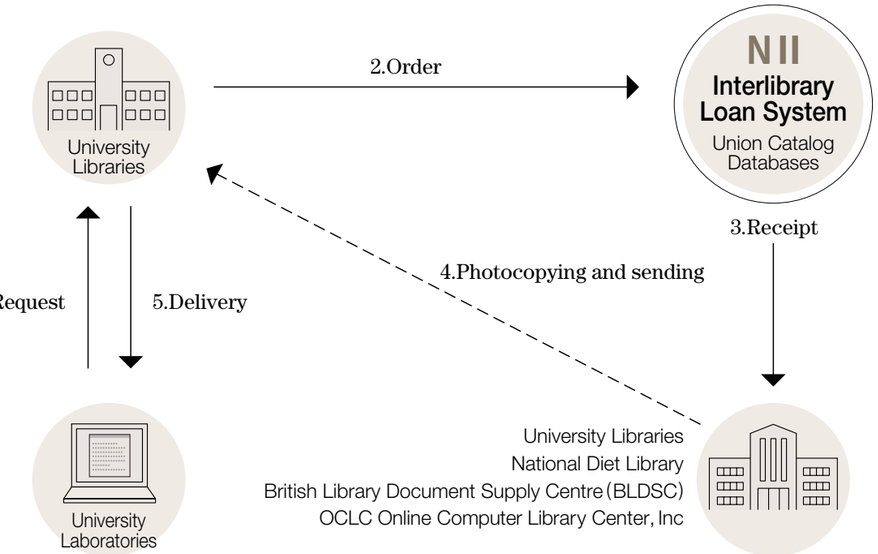
Cataloging System (NACSIS-CAT)

The NACSIS-CAT Cataloging System consists of the union 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 2003, the number of libraries connected to this system exceeded 1,020, with over 70 million registered records.
The union catalog 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 metadata-database of academic resources disseminated on the Internet by universities and research institutes in Japan.

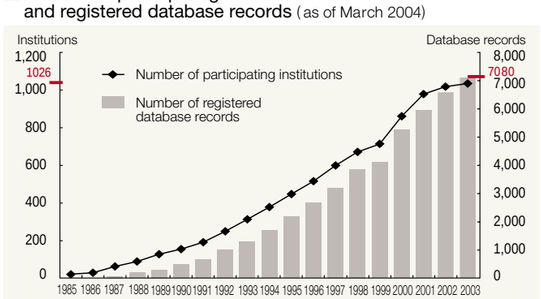


Interlibrary Loan System (NACSIS-ILL)

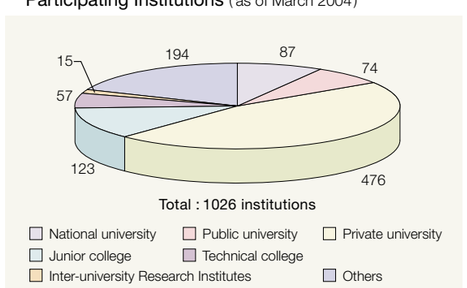
The Interlibrary Loan System (NACSIS-ILL) supports the exchange of information among libraries to facilitate the provision of documents to researchers at universities and other institutions. The service applies the latest information from the union catalog databases constructed by NACSIS-CAT, resulting in improved efficiency and prompt delivery of documents to users. Users of the system may also request materials from the 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 1,100,000 requests were submitted to this system in 2003.
Off-setting service began this fiscal year.



Number of participating institutions and registered database records (as of March 2004)



Catalog Information Service Participating Institutions (as of March 2004)



Webcat

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

Access to Webcat (F.Y. 2003)

Number of Search 18,353,000

Webcat Plus

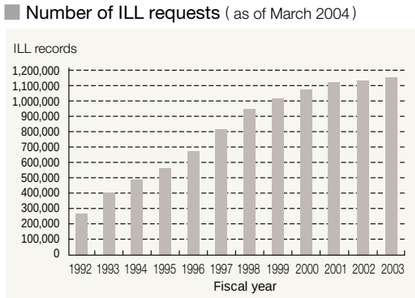
http://webcatplus.nii.ac.jp/

next-generation Webcat

Access to Webcat Plus (F.Y. 2003)

Number of Search 4,031,000

Number of ILL requests (as of March 2004)



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

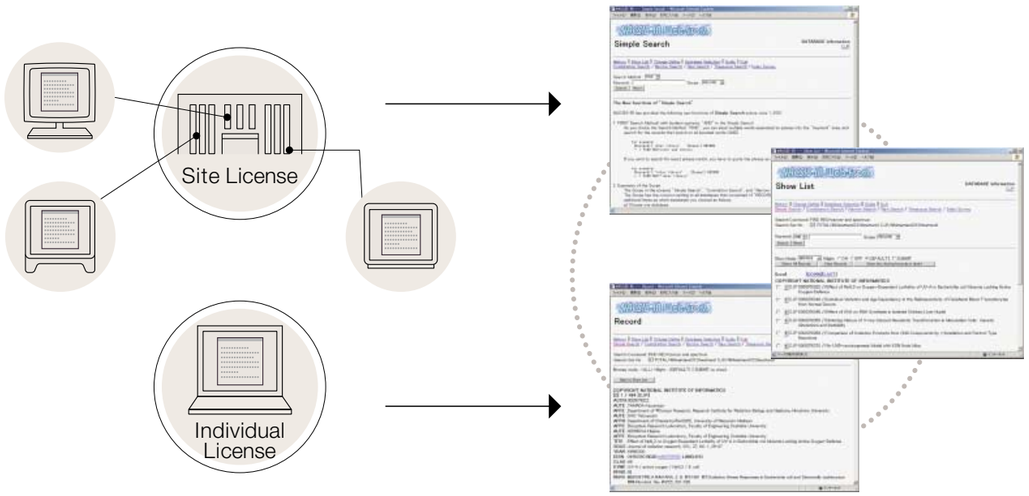
Contact : Contents Division, Academic Information Service Section
TEL.03-4212-2320 FAX.03-4212-2375 E-mail : illadm@nii.ac.jp

Information Retrieval Service (NACSIS-IR)

http://www.nii.ac.jp/ir/ir-e.html

The Information Retrieval Service (NACSIS-IR) has accumulated approximately 100 million records in all fields of the humanities, social sciences, and natural sciences, and provides researchers with prompt and precise online access to scientific research information.

Under a new Site License System, which was started in April 2002, all members of the organization that pays a fixed charge can access to NACSIS-IR.



■ **Registered data** (as of March 2004)

Number of databases	Number of records
42	127,601,000

■ **Access to NACSIS-IR** (F.Y. 2003)

Number of individual license	Number of site license	Access to NACSIS-IR	Connection time	Number of hits
10,393	474	256,000	484,000 minutes	3,264,000

Use of NACSIS-IR

■ **Eligible users**
Individual License : Staff and graduate students of universities, junior colleges, technical colleges, and inter-university research institutes, etc.
Staff of national laboratories, of independent administrative corporations, and of public corporations with research or research support objectives
Staff of scientific research corporations and educational institutions corresponding to universities, and full members of academic societies
Site License : Universities, junior colleges, technical colleges, inter-university research institutes, etc.
National laboratories, independent administrative corporations, and public corporations with research or research support objectives, etc.
Scientific research corporations and educational institutions corresponding to universities; academic societies

■ **Use charges**
Individual License : ¥50 per minute connected, ¥13 per hit or ¥30 per connection as to databases
Site License : Charges (annual) are calculated according to the number of full-time teaching staff and researchers.

■ **Service hours** The service is generally available 24 hours a day (the service is, however, suspended 8:00–9:00 am Mondays, all day on March 31, and other times as necessary for system maintenance).

List of Databases Accessible through the Information Retrieval Service

■ **Creating Databases**

- Economic Titles Japan
- Grant-in-Aid Scientific Research
- Register of Grant-in-Aid Scientific Research
- Dissertation Index
- Current Contents of Academic Serials in Japan
- Citation Database for Japanese Papers
- Database Directory
- Private Grants-in-Aid Research
- Union Catalog (Books, Serials)

■ **Importing Databases**

- Arts & Humanities Citation Index
- Social Sciences Citation Index
- Science Citation Index Expanded
- List of Conference Proceedings in Science and Technology
- National Diet Library Catalog of Foreign Books
- Japanese Periodical Index
- Register of Private Grants-in-Aid
- JPMARC
- LCMARC (Books, Serials)

■ **Assimilating Databases**

- Directory of Special Collections of National University Libraries
- Database on Bibliography for Scientific Studies on Cultural Properties
- Bibliography of Japanese Sociology
- Catalog of Collection related to Curriculum Development and Instruction in Japanese Language Teaching, held by Naruto University of Education
- Summary of Materials of Ishin History
- Inventory of Japanese Historical Documents
- Hokkaido University Northern Studies Collection Database
- Bibliography of Central Asian Historical Studies in Japan
- Bibliography of Islamic and Middle Eastern Studies in Japan
- Japanese Slavic and East European Studies Database
- Bibliographia Germanistica Japonica
- Database of Dossiers related to Japan in Russian Diplomatic Archives
- Database of American Studies in Japan
- Catalog Database of Southeastern Asian Studies
- Chemical Sensor Database
- Chemical Education Database
- RAMBIOS
- Primatological Reprint Collection Database
- Index to Papers of Architectural Institute of Japan
- Database of Medical Conference Proceedings in Japan
- Database of Geographical Studies in Japan
- Index for General Information of Home Economics Research

Contact : Contents Division, Academic Information Management Section II
TEL.03-4212-2350 FAX.03-4212-2370 E-mail : irhelp@nii.ac.jp

Online Scientific Terms (Sciterm)

http://sciterm.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 2004)

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

■ **Access to Sciterm** (F.Y. 2003)

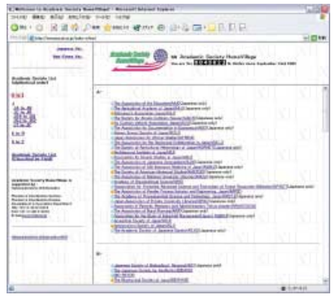
Access to the top page
386,000

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 2004)

Participating societies	Details	
	Web hosting service	Links to academic society websites
861	707	154

■ **Access to the Academic Society HomeVillage** (F.Y. 2003)

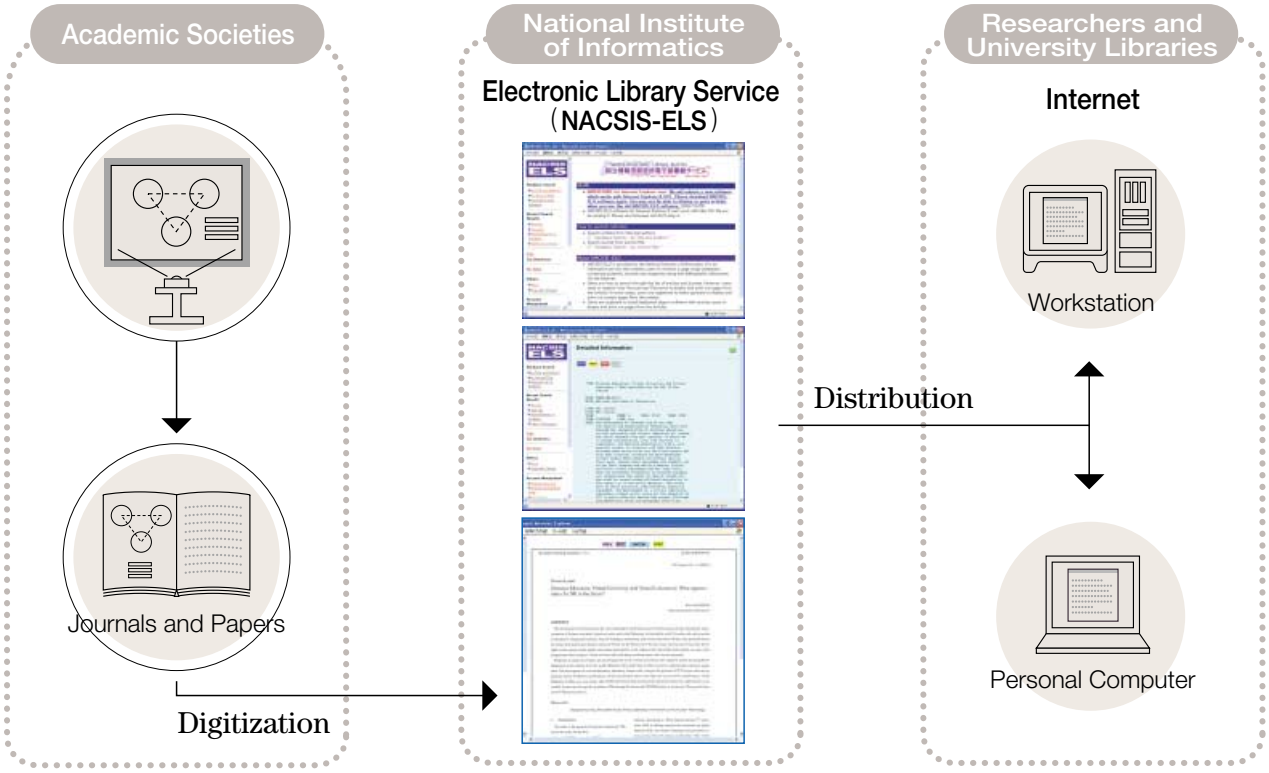
Access to the top page
410,000

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

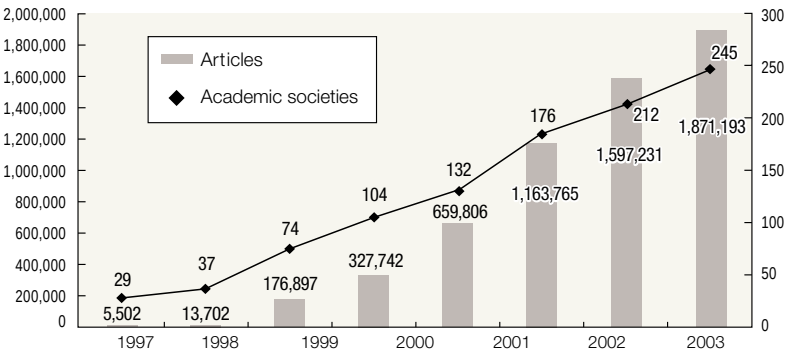
Electronic Library Service (NACSIS-ELS)

http://www.nii.ac.jp/els/els-e.html

The Electronic Library Service (NACSIS-ELS) enables users to retrieve, via the Internet, material from image databases containing photographic reproductions of academic journals and magazines, as well as bibliographical information.
Researchers can search from their computers for journal articles by title, author, or keywords. Users can also select articles from tables of contents or by browsing through selected pages. Users can use local printers to make high-quality printouts of desired pages.
Currently the database mainly includes academic journals published by Japanese academic societies. The range of available information will expand in the future as the number of participating academic societies increases.
More than 30 academic societies joined this service in 2003, with a total of approximately 240 participating societies. In addition, over 1,700,000 articles are now included.
The NII Electronic Journal Repository (NII-REO), initiated in fiscal year 2003, which stores electronic journals of participating publishers, ensures the steady and continual provision of electronic journals to universities, and enables users to search for journal articles from a range of publishers.



Registered data of NACSIS-ELS (as of March 2004)

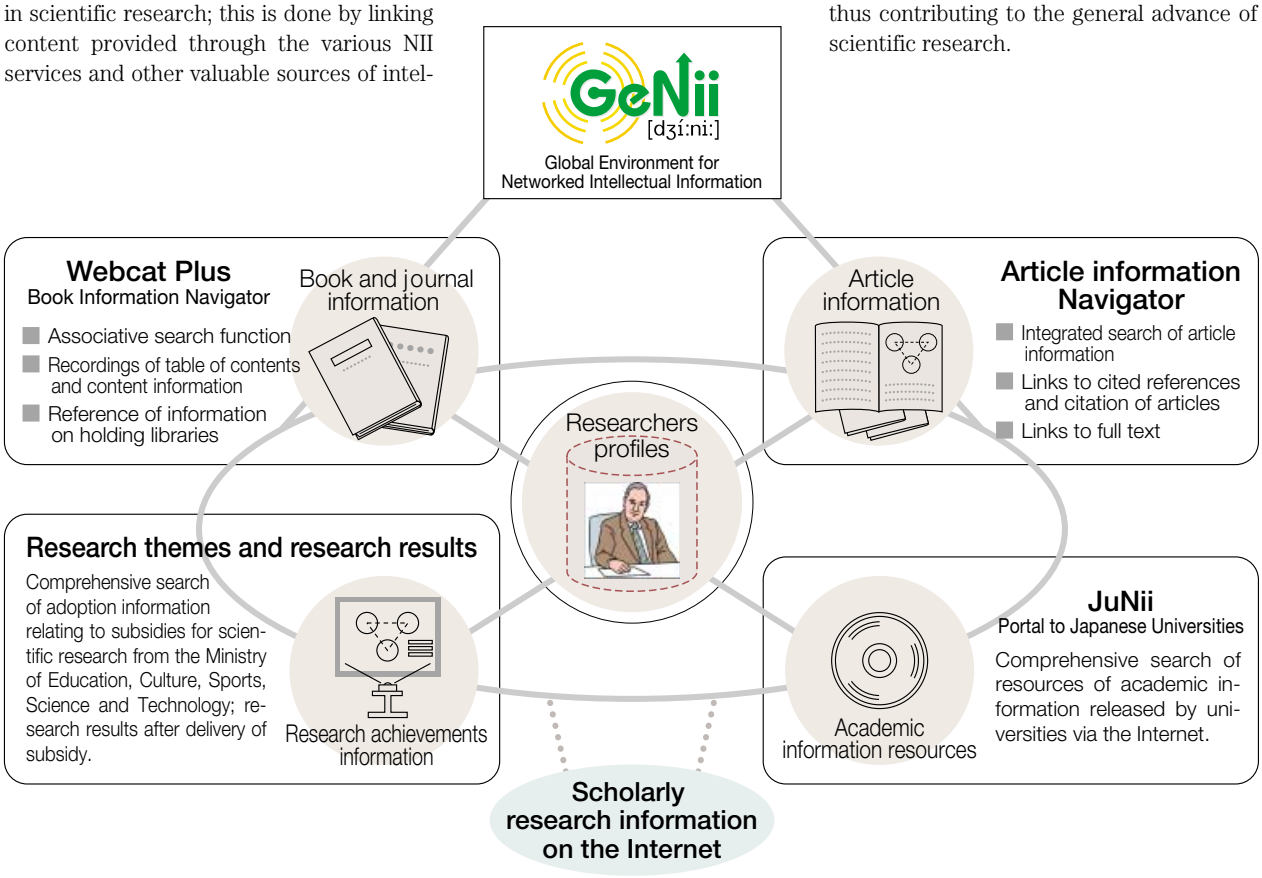


Contact :
Contents Division, Academic Information Management Section I
TEL.03-4212-2340
FAX.03-4212-2370
E-mail : els@nii.ac.jp

GeNii (Global Environment for Networked Intellectual Information)

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

The GeNii system (Global Environment for Networked Intellectual Information) entails the construction of an environment to facilitate the integrated use of information required in scientific research; this is done by linking content provided through the various NII services and other valuable sources of intellectual information in Japan and overseas via the Internet. By networking a range of intellectual information stored in various locations, GeNii will enhance access to the information, thus contributing to the general advance of scientific research.



Webcat Plus (Book Information Navigator)

This search site features an associative search function with a generic associative calculation engine developed by the research division; this function helps users find the appropriate books from among broad subjects, and is freely available to everyone. At present only Japanese books are registered; however, development is proceeding on a next-generation Webcat that will register overseas books and journals.

Article Information Navigator by NII

This is an integrated search site for article information that enables navigation through Full-Text and cited articles using a core integrated database of article information drawn from various sources. Development is proceeding of an advanced system, applying basic research results both from within and outside the Research Division, in cooperation with the Research Center for Testbeds and Prototyping.

Research themes and research achievements

This system is designed to offer information about various research projects. Initially, NII enables the development of a database to integrate information concerning subsidies for scientific research from the Ministry of Education, Culture, Sports, Science and Technology; subsequent to issuance of the subsidy, the system provides access to research results.

JuNii (Portal to Japanese Universities)

This system provides a portal to academic resources (such as educational or research results) disseminated on the Internet by nationwide universities and research institutes; as of March 2004, NII has collaborated with 266 domestic universities and research institutes.

Actual service incorporating these new functions is scheduled for launch in April 2005.

Contact : Contents Division, Academic Portal Section
TEL.03-4212-2330 FAX.03-4212-2375 E-mail : geniiadm@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 (FY2003)

Research Categories	Number	Awarded amount (Thousands of yen)
Scientific Research (A) (1)	1	9,100
Scientific Research (A) (2)	2	38,740
Scientific Research (B) (1)	1	4,300
Scientific Research (B) (2)	8	30,800
Scientific Research (C) (2)	10	12,600
Encouragement of Young Scientists (A)	3	28,730
Encouragement of Young Scientists (B)	14	16,678
Scientific Research in Priority Areas (2)	10	72,600
JSPS Fellows	4	4,400
Publication of Scientific Research Results	5	64,100
Total	58	282,048

Adjustment cost for the promotion of science and technology	1	214,644

University-Industry Cooperation and Collaboration (FY2003)

Research Categories	Number	Amount Received (Thousands of yen)
Joint Research with the Private Sector, etc.	9	17,666
Commissioned Research	12	74,183
Grants and Endowments	30	48,930

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. In fiscal year 2003, 77 such projects were carried out.

NII Visiting Researchers (FY2003)

Visiting Foreign Research Scholars	3
Part-time Researchers	6
Research Assistants	15
Research Support and Promotion Staff	7
Scientific Research Support Staff	19
Researchers Promoting Science and Technology	4
Researchers for University-Industry Collaboration	15
Graduate Student Research Support Staff	18
JSPS Foreign Postdoctoral Fellows	5
Researcher Dispatched from the Chinese Government	1
Total	93

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 in FY2003

Total	Attribution		Patent Applications
	National Attribution	Individual Attribution	
9	2	7	2

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.

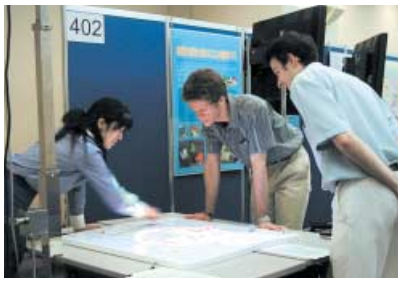
Contact : Intellectual Property Office
TEL.03-4212-2125 FAX.03-4212-2187
E-mail : chizai-staffs@nii.ac.jp

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 House" to present its activities and research results to the public as well as to researchers and Ph.D. candidates.



NII Open House,
(May, 2003)

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 Kansai area,
December, 2003)

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.

DATABASE 2003 TOKYO
(October, 2003)

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, 2004)

Karuizawa Saturday Salon
(June, 2003)

Publications

The NII publishes books and periodicals detailing its research findings.

NII Journal

The NII issues a biannual "NII Journal," a bulletin featuring reports on current research activities. This bulletin is sent to the relevant institute and uploaded to the Electronic Library Service (NACSIS-ELS).

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.

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

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

USA	School of Computer Science and Informatics, University of Michigan
	Institute for Scientific Information, Inc.
	College of Engineering, University of Washington (Seattle)
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)
U.K.	University College London
Thailand	Chulalongkorn University
China	State Key Laboratory on Microwave and Digital Communications, Tsinghua University
Vietnam	International Research Center, Multimedia Information, Communication and Application, Hanoi University of Technology (HUT / MICA)
Others	UNESCO
	Asian Institute of Technology
	North American Coordinating Committee on Japanese Library Resources (NCC)

(April 2004)

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 (as 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
	Gveongsang National University Library

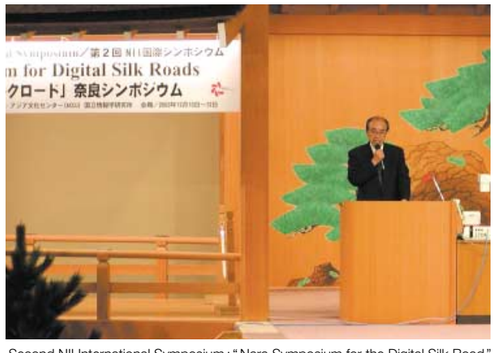
Visiting Research Scholar (F.Y.2004)

	Research Project	Period
ANGELINO, Henri (France)	Designing and promoting joint Japanese/French programs in informatics research and higher education	December 1, 2002 - March 31, 2005
HOULE, Michael E (Canada)	Research on scalable clustering and classification by approximation-similarity search.	February 1, 2004 - March 31, 2005
AMPORNARAMVETH, Vuthichai (Thailand)	Research into the human interface of symbiotic intelligent robots and distributed-intelligence platforms.	April 1, 2002 - March 31, 2004

- Researchers dispatched to foreign countries (FY2003) 2
- Researchers dispatched to international research assemblies (FY2003) 5
- Visitors from foreign countries (as of March 2004) 58

International Symposium

The NII has held a regular "NII International Symposium" since 2003. The first was held in the U Thant International Conference Hall, United Nations University, on March 5, 2003, under the theme of "Digital Libraries and Electronic Journals: New Challenges." UNESCO, the Japanese National Commission for UNESCO, the Asian/Pacific Cultural Centre for UNESCO (ACCU) and the NII held the second international symposium, "Nara Symposium for the Digital Silk Road" at the Nara-ken New Public Hall from December 10 to 12, 2003.



Second NII International Symposium : " Nara Symposium for the Digital Silk Road " (December, 2003 at Nara-ken New Public Hall)

International Activities of Scholarly information Service

Interlibrary Loan System (NACSIS-ILL)

The Interlibrary Loan System of NII is linked with one server (ARTTel) of the British Library Document Supply Centre (BLDSC), enabling researchers in Japan to photocopy and borrow documents in the same manner as they do from institutes in Japan. Further to the recommendations of the U.S.-Japan Conference on Cultural and Education Interchange (CULCON), the NII has introduced an Interlibrary Loan System project to improve document delivery services between Japan and the United States. Through this project, the Global ILL has been operating in university libraries in Japan and in the United States since 2002. The NII is preparing to apply Global ILL operations to the Republic of Korea as well.

Information Retrieval Servic (NACSIS-IR)

The NII plans, prepares, and provides a database service for overseas universities and research institutions.

Electronic Library Servic (NACSIS-ELS)

The NII offers its Electronic Library Service (NACSIS-ELS) to overseas universities and research institutions, enabling overseas researchers to utilize academic journals published by Japanese academic societies.

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

Education and Training Program

Advanced Training Programs

The NII carries out various educational and training programs designed to provide opportunities for the academic research support staff at universities and research institutes to learn the latest in specialized and advanced technologies.

- **NII Seminar**
  This seminar trains leading academic research support staff by providing hands-on experience with actual research.
- **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.
- **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 is designed to provide instruction on infrastructure technology relating to the establishment and operation of an institute's internal LAN.
- **Academic Portal Training Course**
  This course provides the opportunity to learn the latest in advanced development and administration of information transmission through academic portals.
- **Academic Information Literacy Training Course**
  This course is designed to train core personnel in the educational field of academic information literacy.
- **NACSIS-CAT Advanced Training Course**
  This course trains leading staff at participating university libraries in the NACSIS-CAT service.

Karuizawa Information Processing Seminar

User Training

NII offers user training courses in NACSIS services. Regional courses are also offered in conjunction with university libraries in order to expand the range of training. The following types of user training courses are offered.

- NACSIS-CAT Training Course
  (Book Course / Serial Course)
- NACSIS-ILL Training Course

NACSIS-CAT Training Course

Provision of the Self-learning System

NII offers a self-learning system (NACSIS-SL) for added user convenience, allowing the user to gain training in our services through the Internet. The NACSIS-ILL study course represents the first NACSIS-SL project.

Support for User Training Sponsored by Universities

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

International Training

In cooperation with the relevant organizations, NII carries out training for support staff in academic research institutions in foreign countries.

Contact : Planning and Coordination Division,
Training Section
TEL.03-4212-2175 FAX.03-4212-2230
E-mail : edu@nii.ac.jp

Staff / Settlement of Accounts

Staff (as of May 2004)

	Director General	Deputy Director General	Professor	Associate Professor	Assistant Professor	Subtotal	Other Employees	Total
Full-time Employees	1	1	31	29	15	77	66	143
Visiting Professors			9	7		16		16
Non-Japanese Visiting Professors			2			2		2
Other Outside Researchers								95
Support Staff								55
Graduate Students								87

Settlement of Accounts (F.Y.2003)

Net annual revenue (Unit: thousands of yen)

Industry-University cooperative research income	1,321,768
Miscellaneous revenues	109,676
Grant-in-aid for Scientific Research	297,171
Total	1,728,615

Annual expenditure settled (Unit: thousands of yen)

Personnel costs		1,359,544
Non-Personnel costs		12,062,180
Research costs, etc.	9,561,275	
Industry-University cooperative research	1,154,189	
Equipment improvement costs	1,049,545	
Grant-in-aid for Scientific Research	297,171	
Total		13,421,724

Organization

(as of July 2004)

- **Director General** — Yasuharu Suematsu
  - Advisory Board
  - Administrative Council
- **Deputy Director General** — Masao Sakauchi
- **Executive Director of Research** — Masao Sakauchi

- **Development and Operations Department** — Director : Yoh'ichi Tohkura; 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 : Takashi Oba
    - 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 : Michitoshi Sekura
  - **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 : Yuji Aoki
    - Research Cooperation Section
    - Graduate School Section
  - **International Affairs Division** — Director : Atsushi Suzuki
    - International Planning Section
    - International Exchange Section
  - **Publicity and Dissemination Division** — Director : Hideho Oba
    - 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

- **Foundation 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	Hideaki Sugawara
Associate Professor	Takeaki Uno	Noriko Arai	Nigel Henry Collier
	Nobuhiro Furuyama	Keiji Matsumoto	
Assistant Professor	Kazushige Terui	Ken Kaneiwa	
Visiting Professor	Yuzuru Tanaka		
Visiting Associate Professor	Peter Van Loock	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	Takayuki Fujino	Soichiro Hidaka	Youdai Watanabe
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	
Visiting Associate Professor	Kazuhiko Kato	Shigeru Chiba	

- **Multimedia Information Research Division** — Director : Takeo Yamamoto
  - Image Processing
  - Multimedia Integration Processing
  - Information Retrieval
  - Computer Vision *

Professor	Shin'ichi Satoh	Hiromichi Hashizume	Takeo Yamamoto
Associate Professor	Helmut Prendinger	Makoto Kanazawa	Norio Katayama
Assistant Professor	Eiji Kamioka		
Visiting Professor	Toshiro Kamiuchi	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	Tsuyoshi Murata	Hiroko Satoh	Akihiro Sugimoto
	Tomoko Matsui		
Assistant Professor	Ryutaro Ichise		
Visiting Professor	Yoshiaki Shirai		

- **Human and Social Information Research Division** — Director : Teruo Koyama
  - Information Management
  - Information Use
  - Library Information
  - Information Institution

Professor	Keizo Oyama	Teruo Koyama	Akira Miyazawa
	Yoh'ichi Tohkura		
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	Masahiro Kohara	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	
Visiting Professor	Yasuhiko Yasuda	Shigeo Urushidani	Hisamichi Okamura
	Shun Tsuchiya	Henri Angelino	
Visiting Associate Professor	Jun Fujioka	Mitaro Namiki	Naohiko Uramoto

- **Research Center for Information Resources** — Director : Jun Adachi
  - Office for Research Coordination and Promotion
  - Data Collection Laboratory *

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

- **Collaborative Research Unit**

Professor	Masayuki Nakajima		
Associate Professor	Katsushiki Yamaoka	Yasuo Tan	

*Sections staffed by Visiting Researchers

List of Graduate Students

Department of Informatics, Graduate University for Advanced Studies

(as of April 2004)

ALEXANDER IMRE KOVACS	Kazuki Kobayashi	BANDITWATTANAWONG THEPPARIT
ANDAROODI ELHAM	Yohei Seki	HUDA MD.NURUL
Ikki Ohmukai	Satoshi Tanaka	Makoto Funakoshi
Tomoko Kajiyama	DUVAL SEBASTIEN JEAN	PLATON ERIC
Keiko Kamioka	Chikahito Nakajima	PHURITATKUL Jumpot
Takaaki Kamogawa	Norio Nakayama	Taizo Yamada
Naoyuki Kawasaki	Hidekazu Nakawatase	Hideo Yamanaka
KAFLE BED PRASAD	Kazuaki Naruse	LI LEI
KIATISEVI PATTARA	Kosuke Numa	LI MING MEI
Masashi Kiyomi	MD. HASANUZZAMAN	WANG YUXIN
Hironobu Kuruma	Kurenai Hashimoto	LE DUY DINH
GODARD Jerome	Masahiro Hamasaki	WATTARUJEEKRIT Tuangthong

Commissioned Graduate University (Special Collaboration Research Students)

(as of April 2004)

Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology	Satoshi Suzuki	
The Graduate School of Information Systems, University of Electro-Communications	Naoyuki Okamoto	
Science and Engineering, Waseda University	Kenji Tei	Hiromi Muto

Cooperative Graduate University

(as of April 2004)

Graduate School of Information Science and Technology, The University of Tokyo

Ahmad Suffian	NGUYEN KHANH NGOC	Takuo Doi	Narihito Yamazato
Fuyuki Ishikawa	Kosuke Konishi	Gaku Nakamura	Zhixing LIU
Yu Sen Chuan	Kohei Suzuki	Keishi Hosoba	Hiromi Wakaki
Shoko Utsunomiya	Yuichi Sei	Tomonari Masada	
Takeshi Ozawa	Qing Zhao	Kazutaka Matsuzaki	
Takuya Karube	SHEN HENGWEI	Fuminori Yamagishi	

Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology — Aguri Yamasaki

* Names provided with students' permission only

Facilities / Location

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)

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

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.

Hitotsubashi Memorial Hall

Library

The NII Library is a specialized library of informatics that collects scientific books and journals relevant to the field. In addition, the Library offers online journal services for in-house researchers.

Stack Room

Reference Room

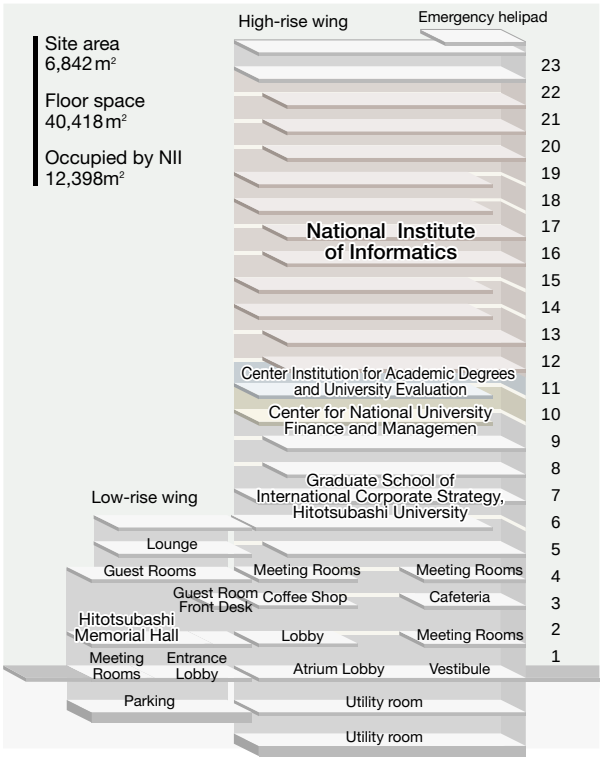
■ Numbers of books, journals, and journal titles (as of April 2004)

Data category	Number of books	Number of journals	Number of journal titles
Published in Japan	7,673	8,175	211
Published overseas	6,546	3,488	270
Total	14,219	11,663	481

■ Main Online Journal Database

	Service	Publisher
1	ACM Digital Library	ACM
2	MathSciNet	AMS
3	CSLSP-e	IEEE Computer Society
4	COMSOC DL	IEEE Communications Society
5	Encyclopedia of Libraries and Information 2nd. Ed. online	Marcel Dekker

National Institute of Informatics



National Center of Sciences: 12F-22F

22	Director General's Office, Deputy Director General's Office, Administration Department Director's Office, General Affairs Division, Budget and Accounts Division
21	Development and Operations Department Director's Office, Development and Operations Department Deputy Director's Office Planning and Coordination Division, Network Division, Content Division
20	International Affairs Division
19	International and Research Cooperation Director's Office Research Cooperation Division, Faculty Office, Intellectual Property Office, Research Organization of Information and Systems
18	Office of Executive Director of Research, Faculty Office, Publicity and Dissemination Division, Library
17	Faculty Office, Common Equipment Rooms
16	Faculty Office, Multimedia Laboratory
15	Faculty Office, Common Equipment Rooms, Seminar Rooms
14	Faculty Office, Graduate Student Room, Student Lounge
13	Faculty Office, Research Center for Testbeds and Prototyping, Open Laboratory, Research Center for Information Resources
12	Conference Rooms, Lecture Rooms, Seminar Rooms for Graduate University, Seminar Rooms

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.

Facilities / Location

Chiba Annex

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

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

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.

Site area (rented)	1,782m²
Floor space	3,715m²

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

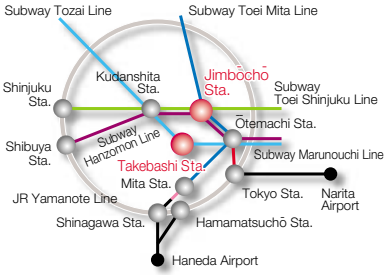
The International Seminar House for Advanced Studies was built in March 1997 in Karuizawa, Nagano Prefecture, as a venue for international conferences, seminars, and training. It has a seminar room that can hold 46 persons, accommodations, and other facilities. It is widely utilized not only by the NII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

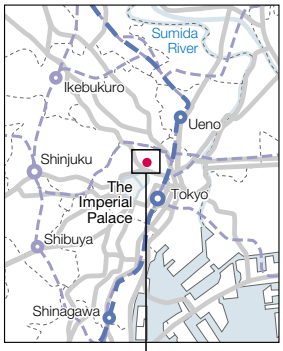
Seminar at the International Seminar House for Advanced Studies

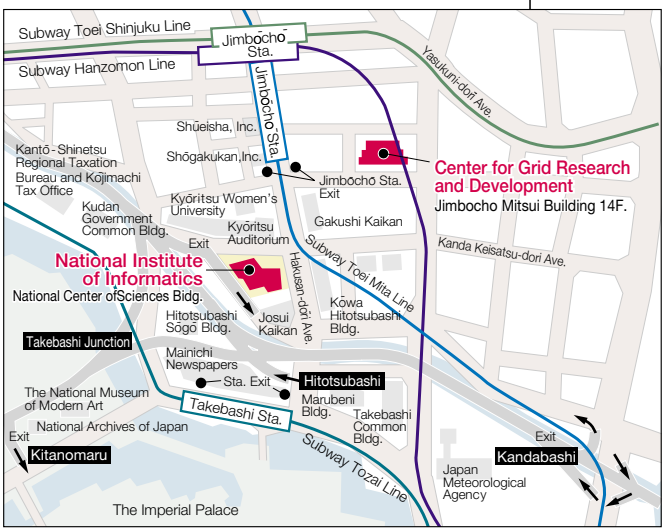
Site area	3,339m²
Floor space	667m²

Guide Map

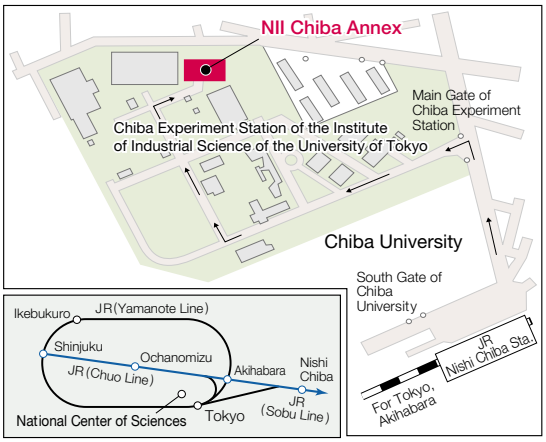
■ National Institute of Informatics
■ Center for Grid Research and Development







■ Chiba Annex



■ International Seminar House for Advanced Studies

National Institute of Informatics