National Institute of Informatics

2009-2010

Weaving Information into Kowledge

NII

Contents

Greeting from the Director General

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

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

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

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

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

Masao Sakauchi

Director General, National Institute of Informatics

April 2009

History

1973 October	Ministry of Education, Science, Sports and Culture proposes an "Improved Circulation System for Academic Information" in the Third Report (Basic Policies for the Promotion of Scholarship) of the Science Council.
1976 May	Research Center for Library and Information Science (RCLIS) is established at the University of Tokyo.
1978 November	"A New Plan for Academic Information Systems" is presented to the Science Council by the Minister of Education, Science, Sports and Culture. The Science Council issues a response in January 1980.
1983 April	Center for Bibliographic Information is established at the University of Tokyo, with the reorganization of the Research Center for Information and Library Science.
1986 April	National Center for Science Information Systems (NACSIS) is established, with the reorganization of the Center for Bibliographic Information, University of Tokyo.
1997 March	International Seminar House for Advanced Studies (Karuizawa, Nagano Prefecture) is established.
2000 February	Operations move to a building in the National Center of Sciences (Hitotsubashi, Chiyoda-ku, Tokyo).
1997 December	An Advisory Panel on a Core Institution for Scientific Research in the Information Field is established by the Ministry of Education, Science, Sports and Culture.
1998 January	A proposal entitled "Promoting Computer Science Research" is published by the Science Council of Japan, calling for the establishment of a core institution for inter-university research in informatics.
1998 March	Advisory Panel on a Core Institution for Scientific Research in the Information Field issues its report.
1998 April	Coordination Office is established for the Core Institution for Scientific Research in the Information Field; committee is formed in May.
1999 March	Coordinating Committee of the Core Institution for Scientific Research in the Information Field issues its report.
1999 April	Preparatory Office is established for the Core Institution for Scientific Research in the Information Field; committee is formed in May.
1999 July	Preparatory Committee of the Core Institution for Scientific Research in the Information Field issues its interim report.
2000 March	Preparatory Committee of the Core Institution for Scientific Research in the Information Field issues its final report.
2000 April	National Institute of Informatics (NII) is established, with the reorganization of NACSIS and assumption of its functions.
2002 April	Ph.D. Program in Informatics is established in the Department of Informatics, Graduate University for Advanced Studies.
2002 September	Research Planning and Promotion Strategy Office is founded.
2002 October	International Course is established within Ph.D. Program in Informatics.
2003 January	Global Liaison Office is formed.
2003 April	National Research Grid Initiative (NAREGI) begins. Initiation of Project to Improve Infrastructure for International Circulation of Scholarly Information
2004 April	NII begins a new chapter as a member of the new Inter-University Research Institute Corporation / Research Organization of Information and Systems.
2005 April	The official service of GeNii (NII Academic Contents Portal) is launched.
2007 April	Science Information Network (SINET3) is launched.

Administrative Council

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

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

Advisory Board

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

Masanori Aoyagi	Director of the National Museum of Western Art
Setsuo Arikawa	President, Kyushu University
Kazuo Iwano	Senior Executives, future Value Creation Team, IBM Japan
Hideko Kunii	Chairman of Ricoh Software Co., Ltd.
Keiichi Kubota	Director General, NHK Science & Technical Research Laboratories
Makoto Nagao	Librarian of the National Diet Library
Hideyuki Nakashima	President, Future University Hakodate
Shojiro Nishio	Trustee, Vice President, Osaka University
Takashi Hanazawa	Director and Senior Vice President, Director of Research and Development Planning Department
Masafumi Maeda	Managing Director, Executive, Vice President, the University of Tokyo
Hideo Miyahara	President, National Institute of Information and Communications Technology
Teruyasu Murakami	Senior Fellow, Nomura Research Institute, Ltd.
Yoichiro Murakami	Professor, Tokyo University of Science
Lotfi A. Zadeh	Professor, University of California, Berkeley
Takeo Kanade	Professor, Carnegie Mellon University
Gerard van Oortmerssen	Director, ICT Regie
Michel Cosnard	CEO, INRIA
Thomas Coleman	Professor, Waterloo University
Wolfgang Wahlster	Director and CEO, The German Research Center for Artificial Intelligence and a Professor of Computer Science at Saarland University
Marek Rusinkiewicz	Vice President and General Manager, Telcordia's Information and Computer Sciences Research
Ramesh Jain	Professor, University of California, Irvine
Bob Williamson	Scientific Director, NICTA (National ICT Australia)'s Canberra research laboratory.
Jeff Kramer	Dean, The Faculty of Engineering & Professor of Distributed Computing Distributed Software Engineering, Imperial College London
Michael A. Keller	Ida M. Green University Librarian, Director of Academic Information Resources, Publisher of HighWire Press, and Publisher of the Stanford University Press
Duk Hook Kwak	President, KERIS (Korea Education and Research Information Service)
Yi Zhang	Director for Office, International Cooperation and Exchange, Tsinghua University
Thaweesak Koanantakool	Vice President, The NSTDA (National Science and Technology Development Agency)
Victor Zue	Director CSIL, MIT

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

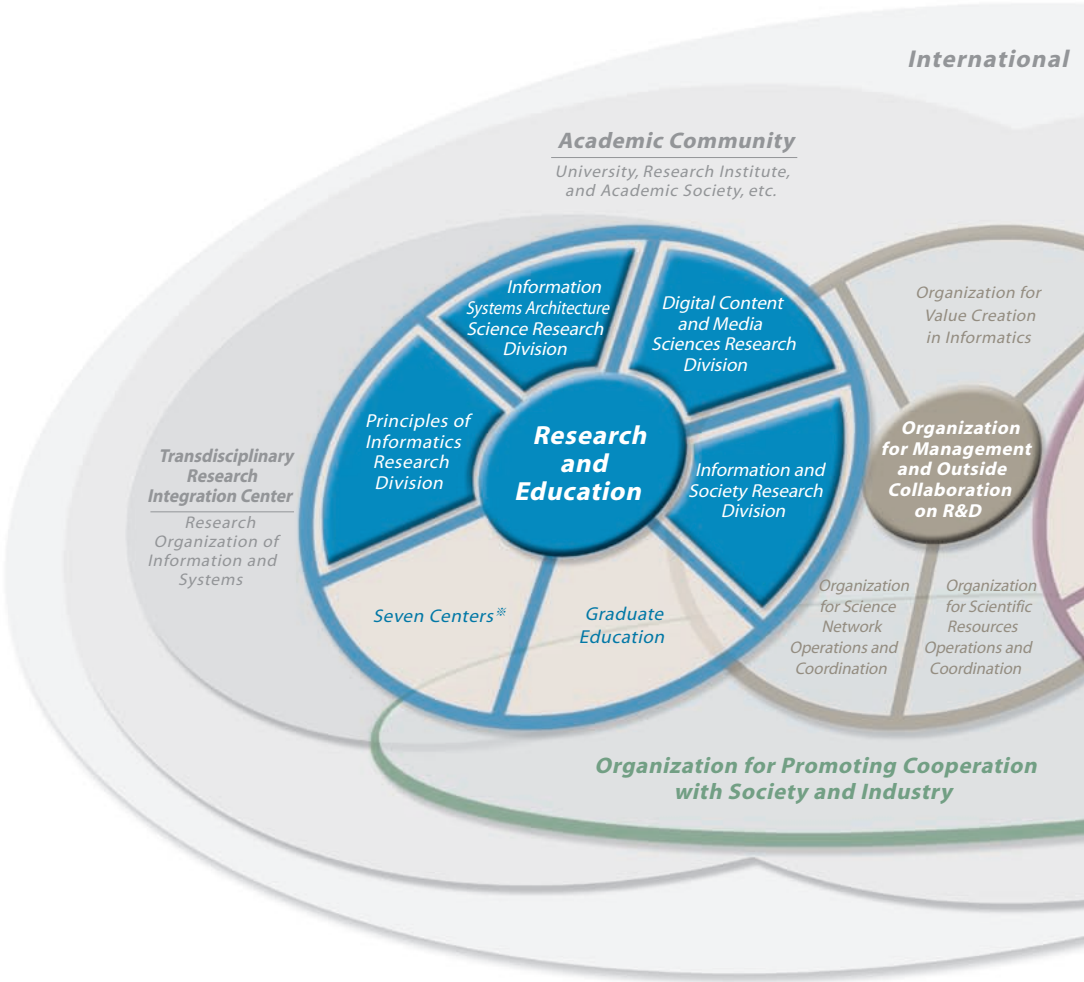
Kimio Ohno	Former Deputy Director General, NACSIS
Atsunobu Ichikawa	Professor Emeritus, Tokyo Institute of Technology
Hitoshi Inoue	Former Deputy Director General, NACSIS
Tatsuo Nishida	Professor Emeritus, Kyoto University

Professors Emeriti (NII : National Institute of Informatics)

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

Future Value Creation through Informatics by

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



Advancing integrated research and education in the field of informatics

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

Creating future value

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

Social and public contributions

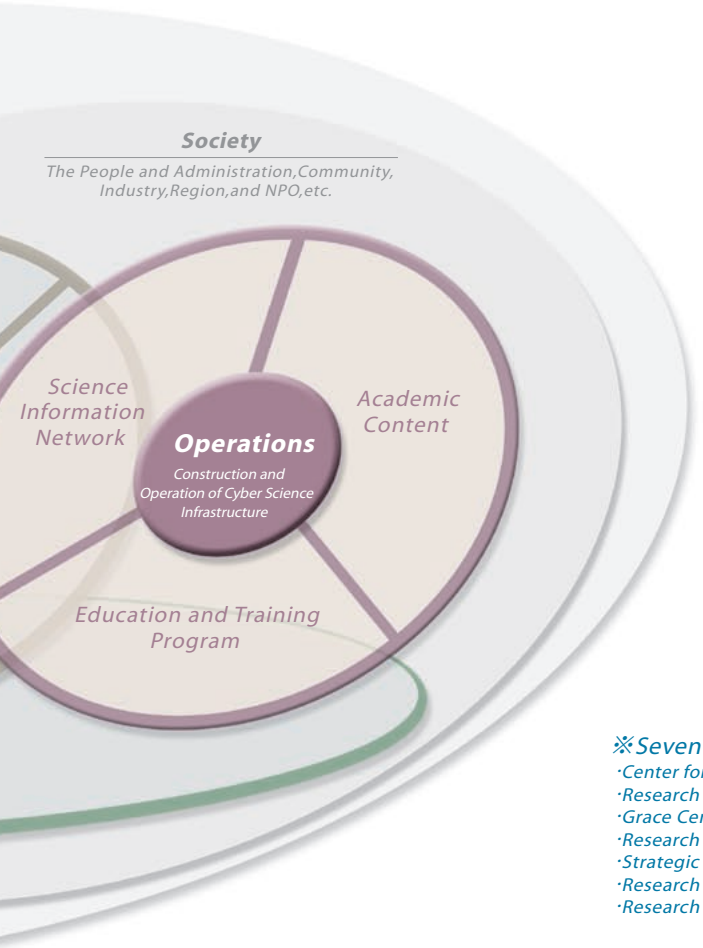
The NII seeks to achieve harmony between society, culture, and social systems, in addition to creating platforms and portals that encourage the establishment, searching, and use of content to develop, and enliven, and disseminate academic, cultural, educational, publishing, and environmental activities,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

Interdisciplinary approach to information processing

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

Advancing Research and Operations in Tandem

is essential to research and education within the broader academic community, with a focus on partnerships and other joint efforts with universities and research institutions throughout Japan, as well as industries and civilian organizations.
Founded in April 2000, the NII marked its new beginning in April 2004 as a member of the Research Organization of Information and Systems.



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

Promoting the Cyber Science Infrastructure (CSI)

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

Partnerships among industry, government, and academic sectors

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

International research activities

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

Graduate education and human resource development

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

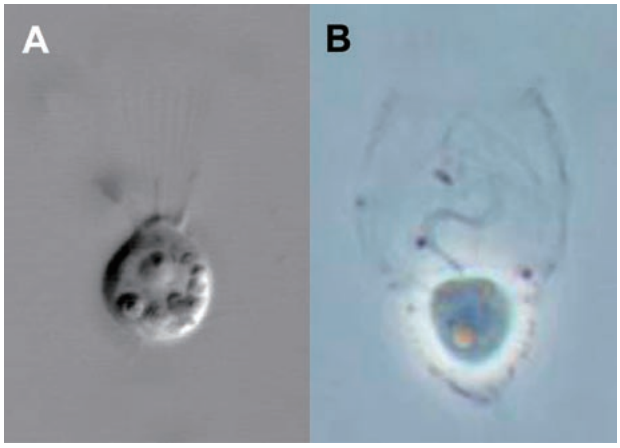
Principles of Informatics Research Division

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

Genome sequencing project of a unicellular choanoflagellate, *Monosiga ovata*

Choanoflagellates are single-celled and colony forming small protists living in marine or freshwater. Most of the recent molecular phylogenetic analyses of nuclear and mitochondrial genes from metazoans, choanoflagellates and other major eukaryotic phyla strongly suggested that choanoflagellate is one of the closest living relatives of metazoans. Therefore, genome-wide sequence analysis with choanoflagellates and major animal phyla, including sponges and cnidarians, is very important for understanding the relationship between the evolution of metazoan multicellularity and the diversification of gene family members involved in cell-cell communication and developmental controls of animals. Our research group has recently determined and assembled more than 600,000 whole genome shotgun sequences of a unicellular choanoflagellate, *M. ovata*. The draft genome sequences of *M. ovata* revealed that choanoflagellates possess a large number of genes that were thought to be involved in 'animal-specific signal transduction pathways', such as protein tyrosine kinases, protein tyrosine phosphatases, and phospholipase C. On the other hand, comparative genome analysis of *M. ovata* with animals, fungi, slime mold, and plants suggested that most of the orthologous genes of 'animal-specific transcription factors' were not observed in the *M. ovata* draft genome. We are trying to understand the relationship between the evolution of multicellularity in animals and the genetic differences among animals, choanoflagellates, and other eukaryotes.

(Keiichi Kuma)



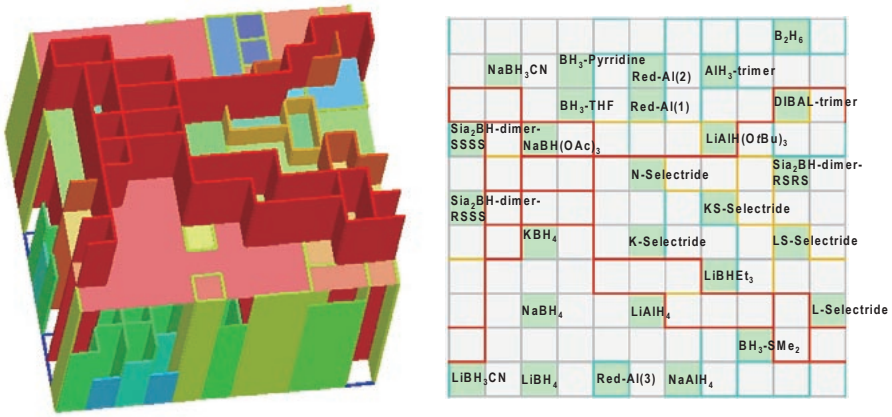
Choanoflagellates. (A) *Monosiga ovata*. (B) Stephanoeca diplocostata.

Chemoinformatics: Towards Making a Guide to the Chemical Reactions' Complex World

Predicting chemical reactions is a fundamental problem in chemistry. Chemical reactions occur as a result of complicated interactions between several factors concerning structural and electronic properties of reactants, reagents, catalysts, and solvents, and conditions such as temperature, density, pressure, and reaction time. These factors make a contribution with the degrees that vary in each case. This broad diversity makes the problem extremely difficult. Solving the reaction prediction problem entails finding a solution from a huge number of possibilities. In this sense, it is said that predicting a chemical reaction is similar to finding out a lost precious item in a desert. To find a solution, the space to be searched ought to be reduced. Hence, chemists must seek ways to reach the solution within an acceptable time by reducing the space in a rational way.

Chemoinformatics is a new discipline that has a possibility to reduce the size of the search space by using chemical information as well as informatics technologies. Reaction prediction is a challenging issue for chemoinformatics, and several attempts have been made to chart a course through the "universe of chemical reactions". One of the projects attempts to make a neural network model to predict chemical synthetic reagents' functions based on the similarities of electrostatic and steric parameters of chemical compounds.

(Hiroko Satoh)



Chemical synthetic reagents classified with Kohonen neural network. Architecture and a 1D map of the neural network.

Information Systems Architecture Science Research Division

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

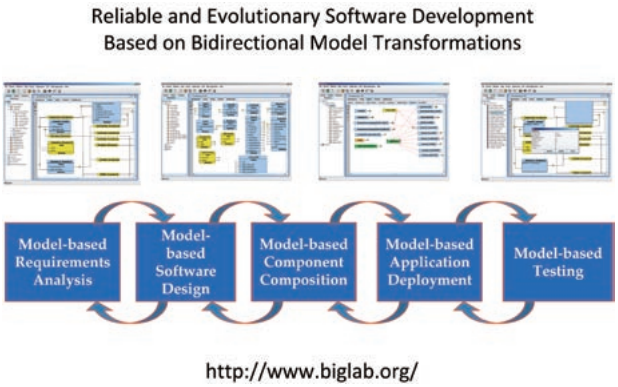
Linguistic Foundation for Bidirectional Model Transformation

Model transformations are a key element in OMG's model-driven software development methodology, providing a standard technology to represent and transform software artifacts such as requirements, design models, program code, tests, configuration files, and documentation. However, after a transformation is applied, the source and the target models usually co-exist and evolve independently. How to propagate modifications correctly across models in different formats and guarantee system consistency remains an open problem.

Supported by the NII Grand Challenge Program, we are addressing this problem with a close international cooperation with Takeichi Group of University of Tokyo, Mei Group of Peking University, and Glueck Group of Copenhagen University. We are establishing a linguistic framework for bidirectional model transformations for improving both productivity and reliability of software. The framework includes (1) a new model transformation language with clear bidirectional semantics, being equipped with a powerful bi-directionality inference mechanism and a virtual machine on which bidirectional model transformation can be efficiently realized; (2) an environment for supporting programming, debugging and maintaining bidirectional model transformations; and (3) a set of tools and domain-specific libraries that can be used in practice.

Progress in the project will lead to a new standard for bidirectional model transformations, a new formal method for evolutionary software development, and a reliable tool for model synchronization.

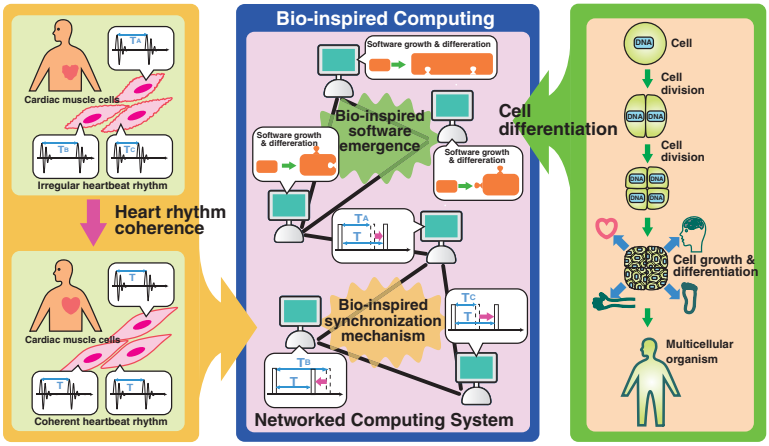
(Zhenjiang Hu)



Bio-inspired Network Computing

There are numerous computers in the Internet, but existing coordinations between computers are still primitive like the aggregation of single cellular organisms. We study several bio-inspired approaches to enable computers to coordinate with one another like multicellular organisms, including human beings, as a new-generation computing architecture. One of them is to introduce the notion of heart rhythm coherence into computers connected through networks. For example, the heart is composed of cardiac muscle cells and beat periodically whereby the cells determine the overall rate of contractions in individual cells without any explicit nervous system or hormonal input. Our approach can synchronize to multiple computers without any central pacemaker mechanisms so that computer make mutual concessions with other computers in a self-origanizing manner. We also attempt to introduce the notion of differentiation for the development process of tissues and organs in multicellular organisms into software systems. Our approach enables software components to adapt their functions to their dynamic requirements like biological differentiation. We are now experimenting on plasticity and reversibility between client-server file-sharing systems and peer-to-peer file-sharing systems.

(Ichiro Satoh)



Digital Content and Media Sciences Research Division

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

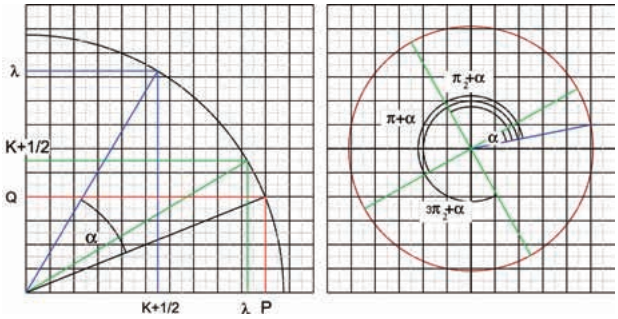
Guaranteeing accuracy of reconstructed three-dimensional images

The technology for reconstructing three-dimensional images has made remarkable progress. However, an important issue still remains, that is, guaranteeing accuracy concerning reconstructed three-dimensional images. A tremendous number of efforts has been made to deal with noise and to show the robustness of developed methods. In such studies, however, digitization errors and observation errors are not discriminated in spite that the two kinds are generated in different mechanisms. This project aims at discriminating the two kinds of errors, focusing on pixels/grid-points as the smallest unit of digital images, in order to clarify the limitation of accuracy in 3D reconstruction due to digitization errors.

Rotations in the discrete plane are important for many applications such as image matching or synthesizing mosaic images. Differently from rotations in the continuous plane, rotations in the discrete plane by two different angles can give the same result. Namely, two different angles give the same result after the rotation of a grid point followed by digitization. Generally a range of rotation angles exists in which the same result is obtained after the rotation. We have proposed a method for effectively finding the exact lower and upper bounds of this range using integer computations alone.

(Akihiro Sugimoto)

References(1): Y. Thibault, Y. Kenmochi and A. Sugimoto: Computing upper and lower bounds of rotation angles from digital images, Pattern Recognition, Vol. 42, No.8, pp. 1780-1717, 2009



The Global Lab: an Infrastructure for Participatory Science based on the 3D Internet

The 3D Internet refers to online three-dimensional world-like environments where people, represented as avatars, can interact with each other and virtual objects. The 3D Internet is manifest in the popular "Second Life" virtual world and the recent "OpenSimulator" open source software.

In our "Global Lab" project, we develop the infrastructure for advanced communication and participatory science based on the 3D Internet. To support natural in-world avatars communication, we have created systems that automatically add emotional expression and non-verbal behavior to avatars. Participatory science seeks to involve the general public into the endeavor of science. Using data from the National Agricultural Research Center (NARC), we have implemented a system for wisdom sharing and decision making in the field of environmental studies. In collaboration with the National Astronomical Observatory of Japan (NAOJ), we have developed a platform for synchronous collaborative visualization and experimentation of star cluster evolution. We are also starting to build systems that engage common users to collaborate on molecular structures and examine models of climate change. The Global Lab infrastructure contributes to the vision of an eco-friendly society by replacing movement by digital alternatives without sacrificing the quality of social communication. Furthermore, the Global Lab increases eco-awareness by allowing anyone to test environmental hypotheses in a realistic manner.

(Helmut Prendinger)

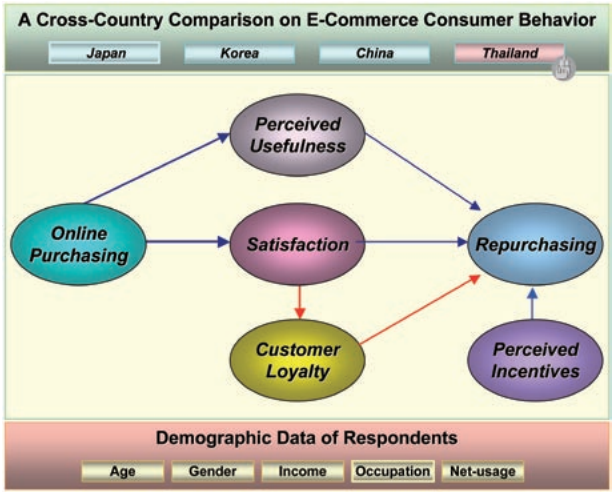
Information and Society Research Division

We remain dedicated to aiding in the creation of a society in which information is integrated into the real world, based on interdisciplinary research on information and systems technologies and on issues in the human and social sciences.

A Cross-Country Analysis of E-commerce Consumers' Behavior

As one of the advantages of the Internet, e-commerce services are seeing rapid increases in the number of users in Japan and elsewhere. However, it is an unfortunate fact that a networked society involves a wide range of risks such as "phishing" scams and leaks of private information.
On this point, via surveys conducted on e-commerce user awareness, we are working to clarify the interrelation between the convenience and the risks of Internet shopping and engaging in research into how consumer satisfaction can be improved and anxieties eliminated. The results of this research are targeted at increasing convenience and efficiency for users and enabling information and communication technologies (ICT) to power economic growth.
We have conducted online user surveys in Japan, China, and South Korea to analyze the differences in the risks and convenience perceived by Internet users in each country. These surveys have elucidated certain tendencies, such as the tendency of users in China to try to buy high-quality products by carefully reading the reviews written by other buyers on e-commerce websites and the tendency of consumers in Japan to be more loyal to certain shops.
From now on, we conduct a research in Thailand, where the e-commerce market is at the evolution phase, in order to clarify how consumer behavior changes in response to the development of a networked society. Making clear the interrelations between services created through ICT, their users, and society, on a global scale, will make it possible to achieve sustained growth of the Internet economy.

(Hitoshi Okada)



Political information environment created by media and interpersonal communications

Scholars who study voting behavior generally see the sphere of political discourse and information in which people are embedded as a major factor contributing to actual behavior, and considerable research has been done on the effects of the political information environment created by mass media on public attitudes and voting behavior. In recent years, the Web has emerged as a prominent factor in the political information environment.
However, the political information environment is not created by the mass media and Web alone. The casual conversations we engage in as part of personal interactions in our daily lives constitute another major force in the political information environment. The table shown here shows the direct effects of the political information environment in which respondents live on actual voting behavior. A regression model was used to examine the results of three-wave panel surveys during a three-day period, including election day, immediately before the Upper House elections of summer 2007.
The results indicated that political information encountered through the mass media or the Web could not be used to forecast voting behavior, while interpersonal communications (political conversations) had obvious and consistent effects.
We can see, from this result, even in a modern society where information and communication technology is highly advanced, people's conversation, a medium from ancient days, plays an important role within the information environment. We expect future research to pursue additional comparisons of contact with various types of information and to establish an integrated model to examine the process of the consumption and processing of political information, based on the mass media, the Web, and interpersonal communications.

(Tetsuro Kobayashi)

dependent:	# of ballots for LDP and DPJ (0-2)	all respondents		undecided respondents two days before voting	
		ballots for LDP	ballots for DPJ	ballots for LDP	ballots for DPJ
demographic vars	sex	0.15	-0.22	0.23	-0.19
	age	0.00	0.01 +	-0.01	-0.01
	education	0.13	0.09	-0.05	-0.10
	household income	0.04	0.04	0.00	0.08
	subjective social stratum	-0.10	0.05	-0.06	0.36 +
party ID	support for LDP	1.21 **	-0.20 *	1.27 **	-0.25
	support for DPJ	-0.29	0.90 **	0.23	0.01
massmedia	# of newspaper	0.22 +	0.06	0.09	0.08
	# of TV news program (3 days total)	0.09 *	0.01	0.19	0.80 **
web browsing (3 days total)	Pro-LDP + Anti-DPJ content	0.04	0.06	-1.10 +	-0.13
	Pro-DPJ + Anti-LDP content	-0.10	0.06	0.12	0.22
election campaign (3 days total)	# of LDP campaign exposure	0.25 *	-0.08	0.27	-0.09
	# of DPJ campaign exposure	-0.15	0.13 +	-0.18	0.00
political discussion (3 days total)	Pro-LDP + Anti-DPJ content	1.35 **	-0.96 **	1.41 **	-0.96 **
	Pro-DPJ + Anti-LDP content	-1.63 **	0.69 **	-1.26 **	0.34
	cutpoint 1	3.69	1.73	2.28	0.96
	cutpoint 2	4.42	2.49	3.46	2.22
	Number of obs	1014	1014	282	282
	Pseudo R-squared	0.30	0.15	0.21	0.10

Research Center

Center for Grid Research and Development

The Center for Grid Research and Development is responsible for development and maintenance of NAREGI Version 1 grid middleware, its deployment to the Cyber Science Infrastructure, and support of grid operation.

Research and Development Center for Informatics of Association

The Center seeks associative calculation mechanisms for large-scale contents, and develops practical information technology to enhance associative ability of human.

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

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

Research Center for Community Knowledge

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

Strategic Research Projects Incubation Center

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

Research and Development Center for Academic Networks

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

Research and Development Center for Scientific Information Resources

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

Organization for Management and Outside Collaboration on R&D

Organization for Science Network Operations and Coordination

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

Organization for Scientific Resources Operations and Coordination

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

Organization for Value Creation in Informatics

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

Organization for Promoting Cooperation with Society and Industry

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

Grand Challenge

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

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

Projects

Cyber Science Infrastructure (CSI)

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

Informatics for future value creation

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

Next-generation software strategies

- Next-generation operating system: SSS-PC
  Takashi Matsumoto
- Top SE (Education Program for Top Software Engineers)
  Shinichi Honiden
- Development of Dependable Network-on-Chip Platform
  Tomohiro Yoneda

Information environment/content creation

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

A solutions-seeking approach

- Global health tracking system: BioCaster
  Nigel Collier
- Technologies to reduce environmental impact based on IT
  Ichiro Satoh

Social/public contribution

- Cultural Heritage Online in Japan
  Yuzo Marukawa
- IMAGINE –Federated associative search for heterogeneous information resources
  Akihiko Takano
- Information sharing system – NetCommons
  Noriko Arai
- Information reliability mechanism – Infotrustics
  Noboru Sonehara

Integrated informatics

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

Projects

Cyber information infrastructure for the information-explosion era

Jun Adachi
http://research.nii.ac.jp/i-explosion/eng/
The aim of this project is to develop core technologies for advanced IT infrastructure designed for the "information-explosion era." These core technologies are in areas such as the efficient, secure, and unbiased extraction of necessary information from exponentially expanding mounds of data; safe, secure, and sustainable system administration for massive information systems; and utilizing information through user-friendly dialog. The project also incorporates design of social systems to accommodate advanced IT services in wider society, through R&D into a range of advanced techniques in informatics and related fields and flexible combinations thereof.
[Ministry of Education, Culture, Sports, Science and Technology (MEXT): Grant-in-aid for Scientific Research on Priority Area: Professor Kitsuregawa, University of Tokyo)]

Top SE (Education Program for Top Software Engineers)

Shinichi Honiden
http://www.topse.jp/
The Top SE Project is developing a structured software engineering course curriculum based on advanced, practical software development teaching materials put together by software engineering researchers from universities and research institutes in Japan and around the world and augmented by input from industry. The objective is to rectify the tendency of software engineering education and research courses at Japanese universities to pursue "toy problems" — that is, issues that are removed from reality and have little practical relevance. The software targeted in this project is mainly related to networked home appliances. The classes thus developed will be used as the basis for training and educational units equivalent to master's courses at university graduate schools, as part of a structured education program in advanced software engineering. The aim is to train "super-architect" professionals with the capability and adaptability to take on new problems and technological issues.
[Ministry of Education, Culture, Sports, Science and Technology (MEXT): FY2004 Promotion and Adjustment Expenses, for the issue of "Creating Training Facilities for Advanced Software Engineers Integrating Industry and Academia"]

The Bio-portal-in-Japanese Project

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

Associative information access for spontaneous learning

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

Thinking content – The Smartive Project –

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

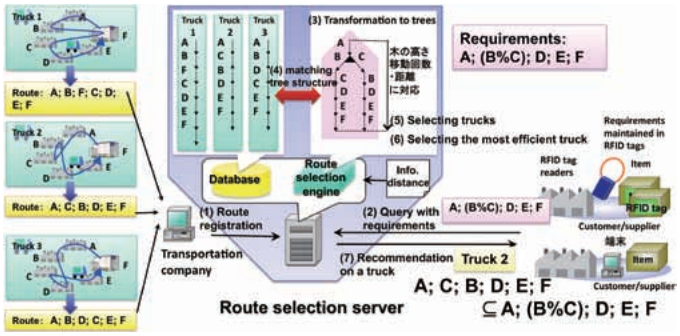
Research Infrastructure for Evaluation of Information Retrieval and Access Technologies – NTCIR (NII Test Collection for IR Systems)

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

Projects

Informatics for Environmental Issues

Ichiro Satoh



The reduction of greenhouse gas, including CO2 emissions, is one of the most important issues facing the global community today. Informatics is expected to have contributions to reduce the amount of CO2 in the earth. We study several approaches to do this. One of them is to reduce the amount of CO2 emitted from logistic trucks. We found interesting similarity between the routes of trucks and the control-flow of programs. We have constructed special programming languages for specifying truck routes so that we make truck routes efficient by using code analysis and optimization techniques used in compiler and software verification. In fact, our approach can reduce the amount of CO2 emission from trucks and is useful to manage cooperative logistics. We propose a novel framework for supporting emissions trading with RFID technology. It is unique because it can use RFID tags, which are put on products, as a certificate of carbon credits attached to the products, trade carbon credits to others through exchanging the RFID tags corresponding to the credits to them, offset our emissions by just giving RFID tags Japan government free of charge.

Cultural Heritage Online In Japan

Yuzo Marukawa

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

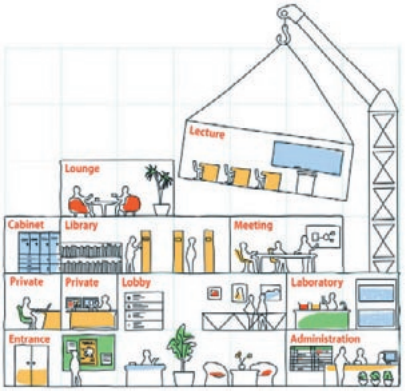
Cultural Heritage Online is a portal that gathers together in one place on the Internet information on a diverse range of significant Japanese cultural artifacts for communication to a wide range of users. Centered on information on artifacts such as works of art and crafts provided by institutions including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

[The Agency for Cultural Affairs]

Information sharing systems – NetCommons

Noriko Arai

http://www.netcommons.org/



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

Information reliability mechanism – Infotrustics

Noboru Sonehara

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

[Ministry of Education, Culture, Sports, Science and Technology (MEXT): Social Science R&D Project, for the issue of "Governance in the Ubiquitous Society"]

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

Asao Fujiyama

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

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

Current Research Topics of Reseach Staff of NII

Principles of Informatics Research Division

Mathematical Informatics	
Ken Hayami	● Numerical Analysis, Numerical Linear Algebra ● Development and analysis of iterative methods for large systems of linear equations, least squares problems.
Kenichi Kawarabayashi	● Graph coloring problems in discrete math ● Structural graph theory and its applications to algorithms ● Network flow and disjoint paths problem
Kunihiko Sadakane	● Succinct data structures for efficient storage and search of data ● Data structures for fast string processing ● Graph exploration algorithms, random walks
Takeaki Uno	● Efficient and practical fast algorithms for solving large scale problems arising from data mining and genome sciences ● Theory of Complexity on Discrete algorithms and enumeration algorithms ● Practical efficient computational models and algorithms for industrial engineering such as scheduling, logistics, and vehicle routing problems
Mathematical Logic	
Makoto Kanazawa	● Lambda calculus and formal grammar ● Logical semantics of natural language
Makoto Tatsuta	● Type theory for classical logic ● Strong normalization of permutative conversions
Quantum Information	
Keiji Matsumoto	● Quantum information and computation
Kae Nemoto	● Quantum information/computation ● Quantum optics ● Theoretical physics
Shoko Utsunomiya	● Quantum simulation using optical semiconductors ● Quantum solid state physics in optical semiconductors
Yodai Watanabe	● Security of quantum key distribution schemes ● Relation among security notions in cryptography ● Performance of probabilistic inference algorithms on graphical models
Yoshihisa Yamamoto	● Photonic quantum information systems ● Electronic quantum simulation systems
Chemical – and Bio – Informatics	
Asao Fujiyama	● Comparative genomics research
Keiichi Kuma	● Comparative genome analysis based on molecular evolutionary approach
Hiroko Satoh	● Chemoinformatics ● Computer chemistry ● Molecular modelling
Intelligent Informatics	
Nigel Henry Collier	● Text Mining ● Natural Language Processing ● Ontology Engineering
Ryutaro Ichise	● Machine learning ● Knowledge systems ● Data mining
Tetsunari Inamura	● Human robot interaction ● Synthetic study of robot intelligence based on stochastic information processing ● Intelligent information processing based on embodiment of robots
Katsumi Inoue	● Inference and Knowledge Representation ● Hypothesis-finding based on Induction and Abduction ● Knowledge Discovery for Systems Biology
Ken Satoh	● Construction of multiagent systems with speculative computation ● Applications of AI to Legal Reasoning
Hideaki Takeda	● Knowledge sharing system ● Community support system ● Design theory

Information Systems Architecture Research Division

Network Architecture	
Shunji Abe	● Researches on performance analysis based on communication traffic measurement and QoS control method ● Researches on photonic network architecture ● Researches on mobile IP communication
Shoichiro Asano	● Integrated control technologies for next-generation all-optical networks ● Survival of network operation against natural calamities
Kensuke Fukuda	● Measurement and analysis of internet traffic ● Network science
Information Network	
Yusheng Ji	● Resource allocation and quality of service in communication networks ● Network traffic modeling and analysis ● Wireless ad-hoc and sensor networks
Motonori Nakamura	● Network Communication Systems ● Security/Authentication Technologies ● Network Operations and Administrations
Shigeo Urushidani	● Dynamic resource optimization technologies for multi-layer networks ● Universal switching system architecture
Shigeki Yamada	● Research on ubiquitous and mobile networks and their applications ● Research on Delay/Disruption-Tolerant Networks (DTNs)

Computer Architecture	
Kento Aida	●Parallel computing ●Grid computing ●Scheduling
Hiromichi Hashizume	●Human interface with computer augmented reality ●Collaboration support systems
Michihiro Koibuchi	●Computer system networks ●On-chip multiprocessor networks ●Large-scale high-performance computing systems
Takashi Matsumoto	●Research on fault-tolerant functions for the SSS-PC operating system ●Research on high-performance embedded microprocessors which can efficiently cooperate with high-speed network
Kenichi Miura	●Grid Computing ●Supercomputer Architecture and Performance Analysis ●Parallel Numerical Algorithms for Large Scale Simulations, Monte Carlo Method, Nonlinear Dynamics
Software infrastructure	
Soichiro Hidaka	●Optimization of XML query language ●Bidirectional graph transformation ●Extensible and distributed operating systems
Zhenjiang Hu	●Principle of Programming: Functional Programming, Programming Algebras ●Software Engineering: Dependable Software Construction, Bidirectional Model Transformation ●Parallel Programming: Skeletal Parallel Programming, Automatic Parallelization
Katsumi Maruyama	●Research on an extensible distributed operating system ●Research on a wide-area cooperative system ●Communication software
Ichiro Satoh	●Middleware for ubiquitous, mobile and distributed computing ●Distributed object and mobile agent
Software Engineering	
Shinichi Honiden	●Autonomous Agents and Multiagent Systems ●Ubiquitos Computing ●Software Engineering
Hiroshi Hosobe	●Theory and solution of soft constraints ●Constraint programming for graphical interfaces ●Hybrid concurrent constraint programming
Shin Nakajima	●Dependable Software Engineering ●Formal Methods ●Model-Checking
Tomohiro Yoneda	●Dependable VLSI system implementation based on asynchronous circuit technology ●Formal verification of real-time software
Nobukazu Yoshioka	●Agent oriented software engineering ●Agent Architecture ●Security Software Engineering

Digital Content and Media Sciences Research Division

Foundations of Content Management	
Isao Echizen	●Technologies and systems for multimedia content security ●Integrity of multimedia content ●Information hiding
Fuyuki Ishikawa	●Service-Oriented Computing (Wec Services and Ambient Services) ●Application of Formal Methods
Norio Katayama	●Data Management Technology for Video Corpus Analysis
Hiroyuki Kato	●Optimization for casual queries to database ●Fundamental issues on optimizing queries to XML databases
Shingo Nishioka	●Research on Scalable Association for Huge Corpus Access ●Interactive methods in information space based on association
Akihiko Takano	●Informatics of Association ●Algebra of Programming
Atsuhiro Takasu	●Data mining and text mining ●Information extraction from document stream ●Distributed index processing
Kazutsuna Yamaji	●Research data sharing and its metadata management ●Platform system activating the research community
Text and Language Media	
Jun Adachi	●Information retrieval and integration of heterogeneous data ●Modeling and implementation of high-performance information retrieval systems ●Text mining
Akiko Aizawa	●Identification and linkage of text information ●Statistical language analysis and automatic construction of linguistic resources ●Language media and interfaces
Keizo Oyama	●Research on techniques for utilizing web information ●Research on an integrated platform for scholarly information services ●Research on full text search technology
Pattern Media	
Duy-Dinh Le	●Semantic representation for video indexing and retrieval ●Advanced video search engines ●Face annotation and retrieval ●Video mining ●Efficient methods for handling high dimensional data
Asanobu Kitamoto	●Data mining from large-scale scientific image databases ●Earth and environmental informatics ●Digital archives for cultural heritage
Kazuya Kodama	●A study on structure of multi-dimensional image information and communication systems of distributed shared image environment with real-time quality control
Hiroshi Mo	●A study on case based video indexing ●A study on intelligent video structuring
Imari Sato	●Physics-based object shape and reflectance modeling ●Creating spatially immersive displays for human computer interaction
Shin'ichi Satoh	●A Study on video analysis, retrieval, and knowledge discovery based on broadcast video archives ●A study on image retrieval
Akihiro Sugimoto	●Sensing and understanding human activities in our daily life ●Automatic modeling of 3D objects ●Computer vision under the existence of digitization errors

Current Research Topics of Reseach Staff of NII

Human and Knowledge Media	
Kenro Aihara	● Computer supported lifelong learning by using digital archives about historical and artistic objects ● Integration of user's context in real- and virtual world
Frederic Andres	● Multilingual multimedia semantic management ● Geomedia Database Management ● Image learning ontology ● Semantic tracking computing
Mayumi Bono	● Understanding Multimodal interaction ● Understanding Conversational Structures in Multi-party Interaction
Masashi Inoue	● Utilization of multiple information sources ● Multimodal communication understanding
Ikki Ohmukai	● Personal communication and interaction in semantic web environment ● Information sharing and distribution based on personal network
Helmut Prendinger	● Life-like characters and avatars in virtual worlds ● Participatory science and collaboration in the 3D Internet ● Automatic content creation ● Emotion and sentiment recognition from text
Seiji Yamada	● Human-Agent Interaction ● Interactive Information Gathering/Retrieval

Information and Society Research Division

Information Use	
Noriko Arai	● Designing collaborative learning environment ● Knowledge sharing, distance learning ● Mathematical logic
Nobuhiro Furuyama	● Motor coordination in communication
Hironobu Gotoda	● Similarity search for 3D models ● Visualizing citation links among research papers
Noriko Kando	● Evaluation of information access technologies ● Exploratory search and user interface ● Cognitive research for exploratory search ● Extracting attitudes and relations from text ● Cross-lingual information access
Teruo Koyama	● Term extraction from text corpora ● Structurization of terms ● Structural analysis of terms ● Knowledge representation and use
Akira Miyazawa	● Union catalogue database construction and usage ● Metadata representation and construction ● Character codes as a fundamental tool for data representation ● D: Data processing utilitiesndexing
Kouichirou Ueki	● Development of the next generation information system
Science Information	
Sumio Kakinuma	● Science and Technology Policy Studies ● Scientometrics ● Sociology of Science ● Research platforms and cyber infrastructure
Masamitsu Negishi	● Research on trends in technology and businesses for databases, electronic libraries and e-journals with the current developments of information and telecommunication technologies ● Bibliometric research for measuring research levels and identifying research trends
Masaki Nishizawa	● Investigation study on network structure of information sciences related research and its trends ● Empirical analyses on the role of Grants-in-Aid for Scientific Research for promotion of basic research ● Empirical analyses on network for industrial-government-university cooperation in Japan
Morio Shibayama	● Metrical analysis of research trends and research evaluation ● Statistical study on change of research environment ● Study on indentification of creativity in research activities
Yuan Sun	● Bibliometric research on university-industry-government relations ● Structure analysis on network of informatics related research ● DIF research in Japanese achievement testing
Information Public Policy	
Tetsuro Kobayashi	● Social and political consequences of ICT use ● Social network and human communication ● Social capital theory
Hitoshi Okada	● Research on Critical Growth Factors of E-Commerce and E-Money ● Research on University Information Security Policy Portal (UISPP)
Noboru Sonehara	● Digital commerce (dCommerce) system ● Intellectual property rights lifecycle management system
Yoh'ichi Tohkura	● Relationships between ICT (Information and Communication Technology) and humans ● Science and technology for the society ● Transdisciplinary study on human information processing
Masashi Ueda	● Network policy for broadband society ● Social and economic analysis of open source software

Graduate Education Activities

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

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

Department of Informatics, The Graduate University for Advanced Studies

Establishment of the Department

The Department of Informatics (advanced PhD program), which began at the Graduate University for Advanced Studies with the participation of the NII in April 2002, saw its first class of students graduate in March 2005.
And Sokendai introduced A five-year doctor course program from 2006. (Admission Quota - A five-year doctor-course program: 4 / A three-year doctor course program: 6) Sokendai is a graduate university composed of 23 majors in six subjects, five of which (corresponding to 20 majors) are shared among inter-university research institutes.

Aims and Structure of the Department

The Department's goal is to foster outstanding young international IT researchers and technicians. Students work toward obtaining a Ph.D.
The Department covers the following six research areas, and offers a total of over 70 subjects.

- Fundamental Informatics
- Foundations and Infrastructure Science
- Software Science
- Information and Media Sciences
- Intelligent Systems Science
- Information Environment Science

Description

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

Guidance for new students

Graduate students office

Enrollment (as of April 2009)

( ) Foreign students among total

Year of Admission		A five-year doctor course program	A three-year doctor course program	Total
FY 2002	April	——	1	2 (0)
	October	——	1 (0)	
FY 2003	April	——	2 (0)	3 (0)
	October	——	1 (0)	
FY 2004	April	——	1 (0)	5 (1)
	October	——	4 (1)	
FY 2005	April	——	3 (0)	5 (0)
	October	——	2 (0)	
FY 2006	April	1 (1)	4 (1)	15 (8)
	October	0 (0)	10 (6)	
FY 2007	April	1 (0)	8 (3)	17 (7)
	October	4 (2)	4 (2)	
FY 2008	April	3 (0)	6 (1)	9 (1)
	October	3 (2)	5 (2)	17 (5)
FY 2009	April	4 (1)	4 (3)	8 (4)
Total		16 (6)	56 (19)	72 (25)

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

Japan	・University of Tsukuba ・Chiba University ・The University of Tokyo ・Tokyo Gakugei University ・Tokyo University of Agriculture and Technology ・Tokyo Institute of Technology ・University of Electro-Communications ・Niigata University ・Kanazawa University ・Nagoya University ・Kyoto University ・Osaka University ・Kobe University ・The University of Tokushima ・Kyushu University ・Kumamoto University ・Iwate Prefectural University ・Kanazawa Institute of Technology ・Keio University ・Sophia University ・Tokyo University of Science ・Nihon University ・Hosei University ・Meiji University ・Waseda University ・Doshisha University ・National Defense Academy of Japan
China	・Fudan University ・Nankai University ・Shanghai Jiao Tong University ・Tongji University ・University of Science and Technology of China
Korea	・Pusan National University
Thailand	・Kasetsart University, Asian Institute of Technology
Bangladesh	・East West University ・University of Dhaka
Viet Nam	・Hanoi University of Technology, Vietnam National University
USA	・The State University of New York
UK	・Imperial College London
Sweden	・Royal Insttute of Technology
Germany	・University of Paderborn
France	・Pierre and Marie Curie University ・Joseph Fourier University, ENSIMAG Institut Poly technique de Grenoble ・Institut National des Telecommunications
Australia	・The Australian National University ・The University of New South Wales ・The University of Western Australia
Cuba	・University of Holguin
Sri Lanka	・University of Kelaniya

Career options

( ) Foreign students among total

Year of Graduation	University/Institution	Company	Not yet determined	Total
FY 2004	4	1(1)	0	5 (1)
FY 2005	6 (5)	3(2)	1(1)	10 (8)
FY 2006	11 (6)	2	2(2)	15 (8)
FY 2007	4 (2)	4(1)	0	8 (3)
FY 2008	5 (1)	2(0)	1(1)	8 (2)
Total	30(14)	12(4)	4(4)	46(22)

Cooperation with Graduate Universities

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

Cooperation with graduate Universities

University	Graduate School	
The university of Tokyo	Graduate School of Information Science and Technology	FY2001 ～
Tokyo Institute of Technology	Graduate School of Information Science and Engineering	Fy2002 ～
	Interdisciplinary Graduate School of Science and Engineering	FY2003 ～
Waseda University	Graduate School of Fundamental Science and Engineering	FY2005 ～
	Graduate School of Creative Science and Engineering	FY2005 ～
	Graduate School of Advanced Science and Engineering	FY2005 ～
JAIST (Japan Advanced Institute of Science and Technology)	School of Information Science	FY2009 ～

Special Collaboration with Research Students

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

Universities which research students for special collaboration belong to (as of April 2009)

University	Graduate School
Chiba University	Graduate School of Advanced Integration Science
The university of Tokyo	Graduate School of Information Science and Technology
Tokyo Institute of Technology	Interdisciplinary Graduate School of Science and Engineering
Keio University	Graduate School of Media and Governance
Waseda University	Graduate School of Fundamental Science and Engineering
JAIST(Japan Advanced Institute of Science and Technology)	School of Information Science
Doshisha University	Science and Engineering Research Institute
Engineering School of Paris - IMAC	
Ecole Nationale Superiure des Telecommunication de Bretagne	
Grenoble INP	

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

Students from other universities (as of April 2009)

Master Course	Ph.D. Course	Research Students	Total
28	30	1	59

Accepting students from abroad through an international internship program

FY2008	13 countries	94

Non-MOU Grant

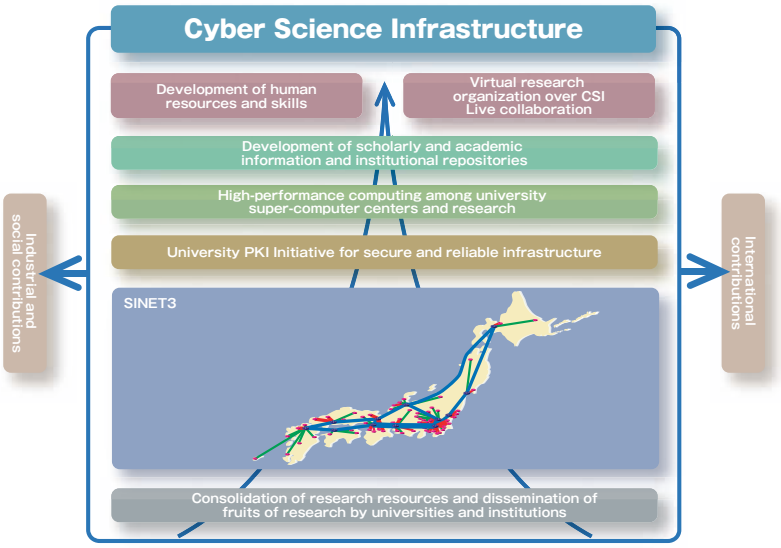
FY2008	1 country	2

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

Consolidation of Cyber Science Infrastructure (CSI)

http://csi.jp/

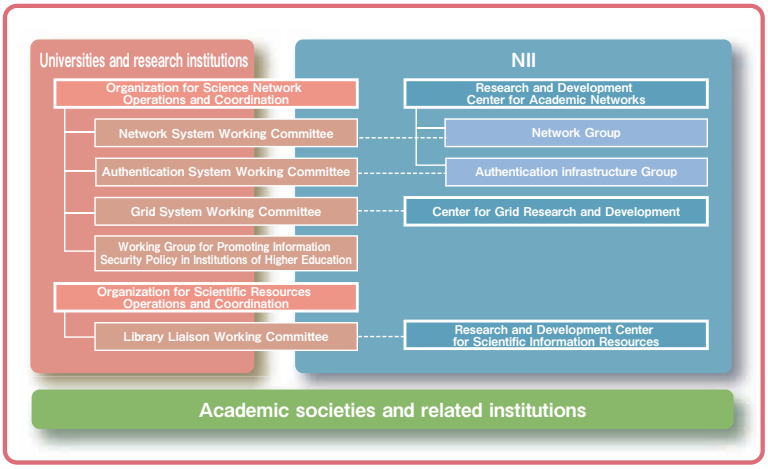
NII is promoting the consolidation of the Cyber Science Infrastructure (CSI) through cooperation with universities and other organizations.
CSI means an information environment that incorporates and utilizes various research activities and results from universities and research institutions – such as supercomputers and other distinctive scientific utilities and resources, scientific software and databases, and human resources that Japan's universities and research institutions possess – over a super high-speed network, transcending the borders of organizations or scientific fields. This infrastructure will guarantee an environment that enables the promotion of cutting-edge higher education as well as research and development of technology in universities, research institutions, and industry.



NII puts in strategic efforts to the following areas, as expanding the various development projects and operations it has implemented to date within the framework of the CSI.

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

NII, universities and other research institutions will collaborate and cooperate closely to facilitate the above, and Japan's academic community will work as one to prepare and vigorously promote the framework for advancing CSI construction.



Contact: Inter-Universities Affairs Team, Infrastructure Planning Division
TEL: +81-3-4212-2215 FAX: +81-3-4212-2230 E-mail:plan@nii.ac.jp

Science Information Network (SINET3)

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

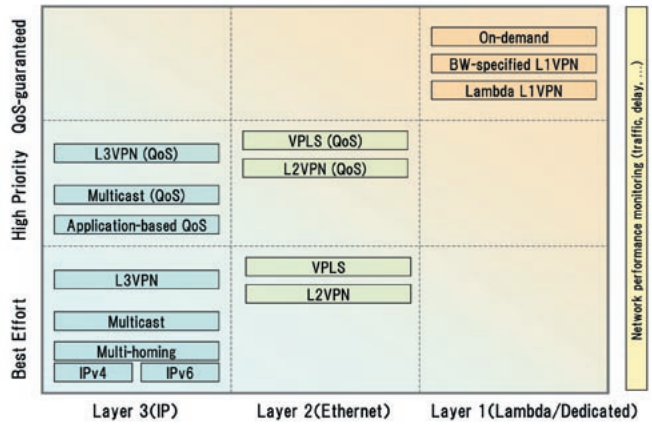
The Science Information Network is an information communication network connecting universities and research institutions throughout Japan via nationwide nodes (connection points); it is designed to promote research and education as well as the circulation of scientific information among universities, research institutions, and similar entities. The Science Information Network is also connected to research networks such as Internet2*1 in the U.S. and GÉANT2*2 in Europe to facilitate the inter-

SINET3 network architecture

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

SINET3 network services

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



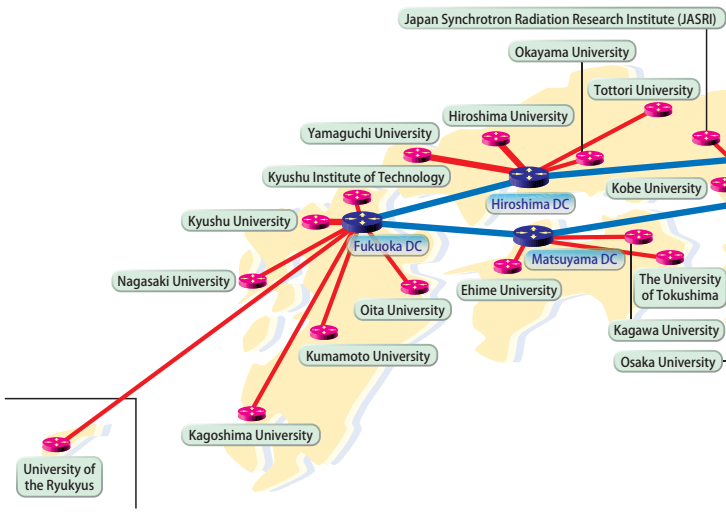
Scope of network service of SINET3

*1 Internet2 Abilene is a testbed network operated by the next-generation Internet development project"Internet2" and involves more than 190 participating universities and research institutes across the US.

*2 GÉANT2 GÉANT 2 is a pan-European research network formed by the EC as a policy initiative, and covers more than 3,000 participating research and educational organizations in more than 30 countries.

Line speed (FY2009)

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

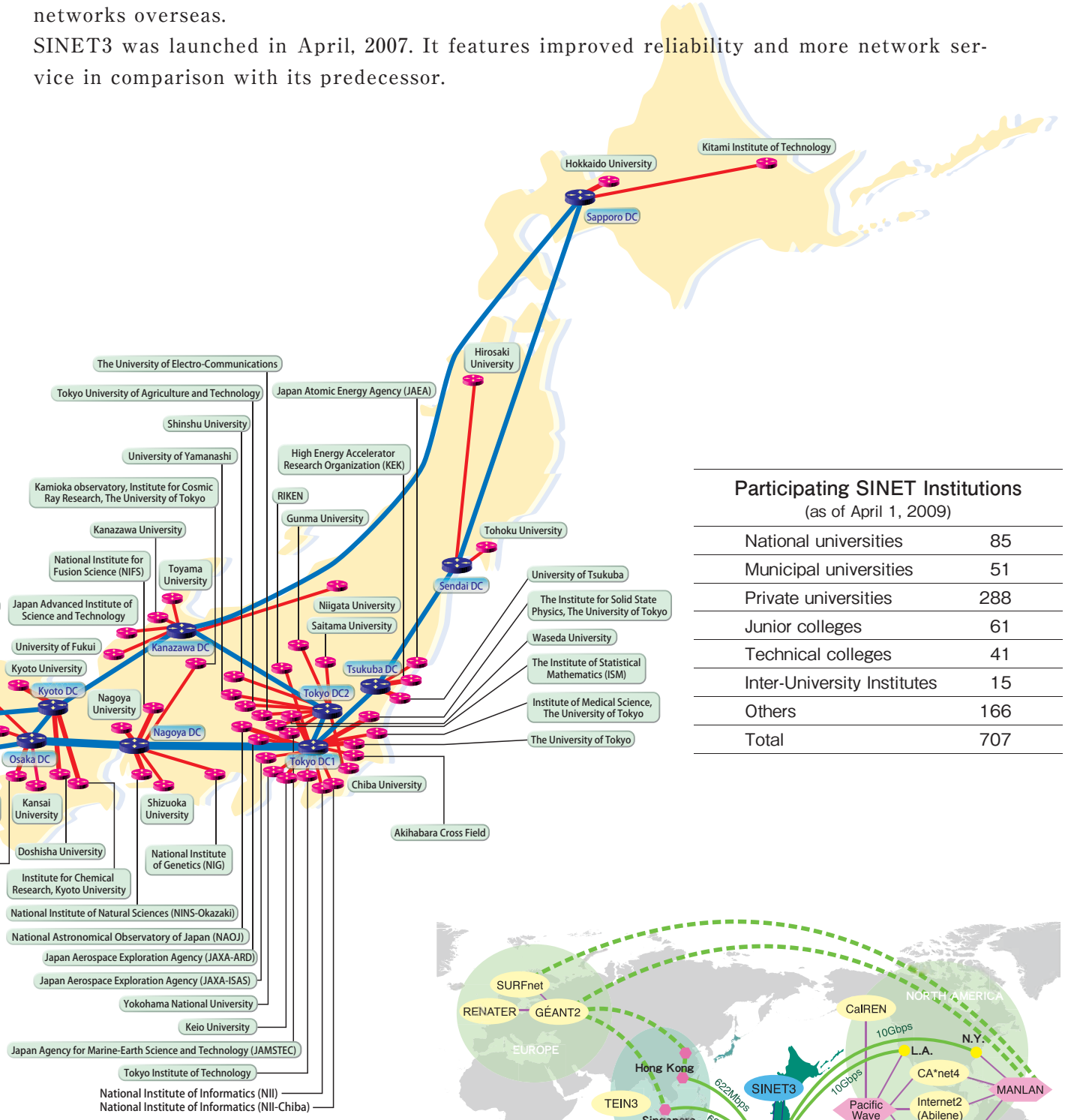


SINET Promotion Office

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

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

national dissemination of research information and to promote collaboration with research networks overseas.
SINET3 was launched in April, 2007. It features improved reliability and more network service in comparison with its predecessor.



Participating SINET Institutions
(as of April 1, 2009)

National universities	85
Municipal universities	51
Private universities	288
Junior colleges	61
Technical colleges	41
Inter-University Institutes	15
Others	166
Total	707

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

International Network Collaboration

University Public Key Infrastructure (UPKI)

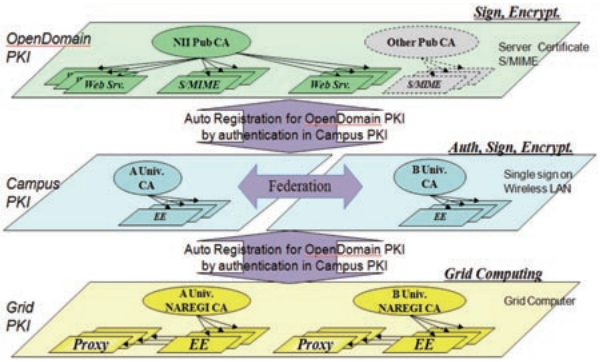
https://upki-portal.nii.ac.jp/

UPKI Overview

An establishment of the University Public Key Infrastructure (UPKI) that intended to achieve an inter-universities cooperation that makes use of digital content and campus networks at Japanese universities and other institutions in safe, convenient, and effective ways has been proceeded from FY2006 to FY2008.

Three layers model is adopted for UPKI which is planned to establish by realizing the certification/authentication platforms in each layer and between the layers through the development of the authentication/signature applications, and opening the common specifications for CA to the public.

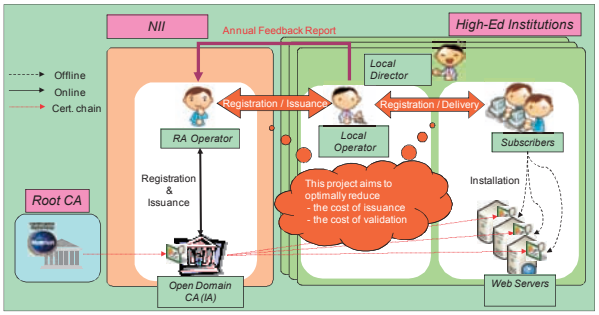
Based on this work, we are issuing Server Certificates that assure the web server existence of their institutions, and we are also working to establish an authentication federation to realize Single sign-on to academic resources.



Issuing open domain server certificates

Public (open domain) server certificates are essential for confirming the actual existence of web servers in a university, i.e. the authenticity that the web server is actually owned by the university, and for encrypting connection between the client and the web server by SSL/TLS protocol. We are coordinating a research project to examine issues related to certificate issuance.

In addition to certificate issuance, this project involves participant universities in some processes of certificate issuance and registration. The project also seeks to expedite and optimize registration and issuing procedures. Though each participant university must establish a cooperative system for the registration process in the university, this project makes it much easier to obtain server certificates for universities.

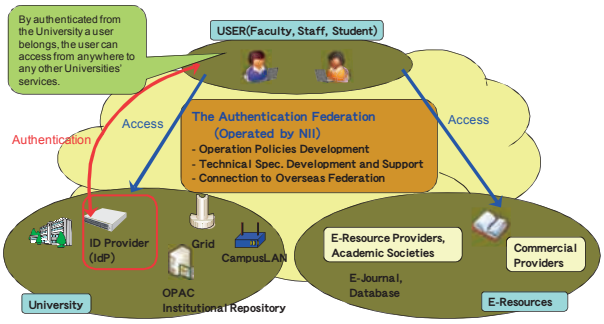


Establishment and Operation of The Authentication Federation

We are currently promoting the establishment of a single sign-on environment based on Shibboleth technology to link the authentication infrastructures established by each university aiming to achieve one-stop access to academic resources.

To build mutual trust among universities upon Shibboleth-based authentication infrastructure, it is necessary to develop the policies and the technical specifications adjusting among universities on the exchange of authentication information. The organization consists of participating universities and in charge of above tasks is called an authentication federation. Many such federations have been established in various overseas countries.

In Japan, the National Institute of Informatics is currently working with universities to establish a federation and also collaborating with publishers of electronic journals and academic database providers to enable one-stop access to academic resources.



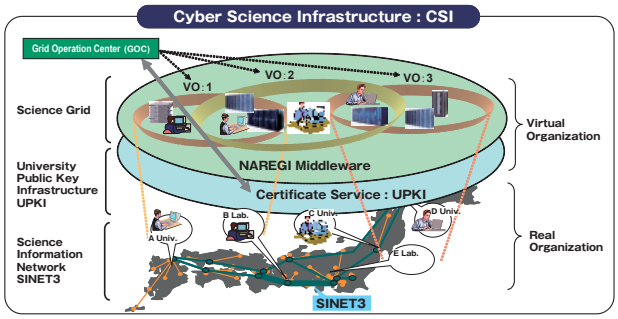
Contact: Inter-Universities Affairs Team, Infrastructure Planning Division
TEL: +81-3-4212-2218 FAX: +81-3-4212-2230 E-mail:upki@nii.ac.jp

NAREGIMiddleware/e-Science community

http://www.naregi.org/

Construction of the Science Grid and Realization of Cyber Science Infrastructure (CSI)

The Science Grid enables not only to share computing resources unilaterally, but also to organize research communities (VO:virtual organizations) which can share data and resources within and among themselves. The NII pursues realization of CSI by using the grid technologies to form research-communities. It also provides support for the deployment and operation of National Research Grid Initiative (NAREGI) Grid Middleware and promotes training for grid users, as well as international research activities undertaken jointly with overseas academic institutions through international cooperation.



NAREGI Grid Middleware

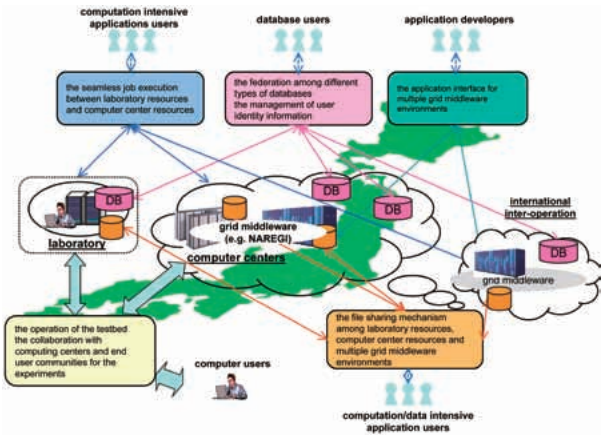
Originally as "The National Research Grid Initiative (NAREGI)" project and later as a part of the "Development and Applications of Next-Generation Supercomputer" project, research and development on the NAREGI Grid Middleware was conducted over the five-year period from 2003 through 2007. In FY 2008, the outputs of this project were released as the NAREGI Middleware Version 1.0.
NAREGI Grid Middleware is software designed for sharing data and computing resources by combining multiple supercomputers and high-end servers which are connected by networks as a single massive virtual computing resource.
NAREGI middleware is an open-source software and is easily available to anyone on the Web. Users can selectively use only the subset of the functions, depending on operational modes and requirements.

Deployment of NAREGI Middleware

NAREGI middleware has been incorporated into some of the supercomputer systems operated by nine university IT centers, and evaluation and trial operations of NAREGI grid middleware is underway in FY 2009. This trial operation will allow users to use effectively and efficiently the computing resources owned by the university IT centers. We are currently working not only with university IT centers, but also with several research organizations with national cooperative research facilities to install the NAREGI middleware. We maintain cooperative relationships with these organizations in order to carry out promotion activities, such as user training, which will be needed in the future.

Expansion of the Grid Environment toward the e- Science communities

Since FY 2008, we have started research and development on technologies for linking resources to create an e-science research communities, as a part of a project entitled "Research and Development on Systems Integration and Collaborations for Realizing e-Science". The objective of this project is to develop software that will enable the sharing and linking of small-scale resources at the departmental/research laboratory level, with the large-scale resources of university IT centers, as well as with overseas grids operating under different environment, including computing resources, data, databases, and applications. We believe this project will create the seamless linking of small-scale and large-scale computational environment, thus strengthening the research capabilities of the e-science communities.



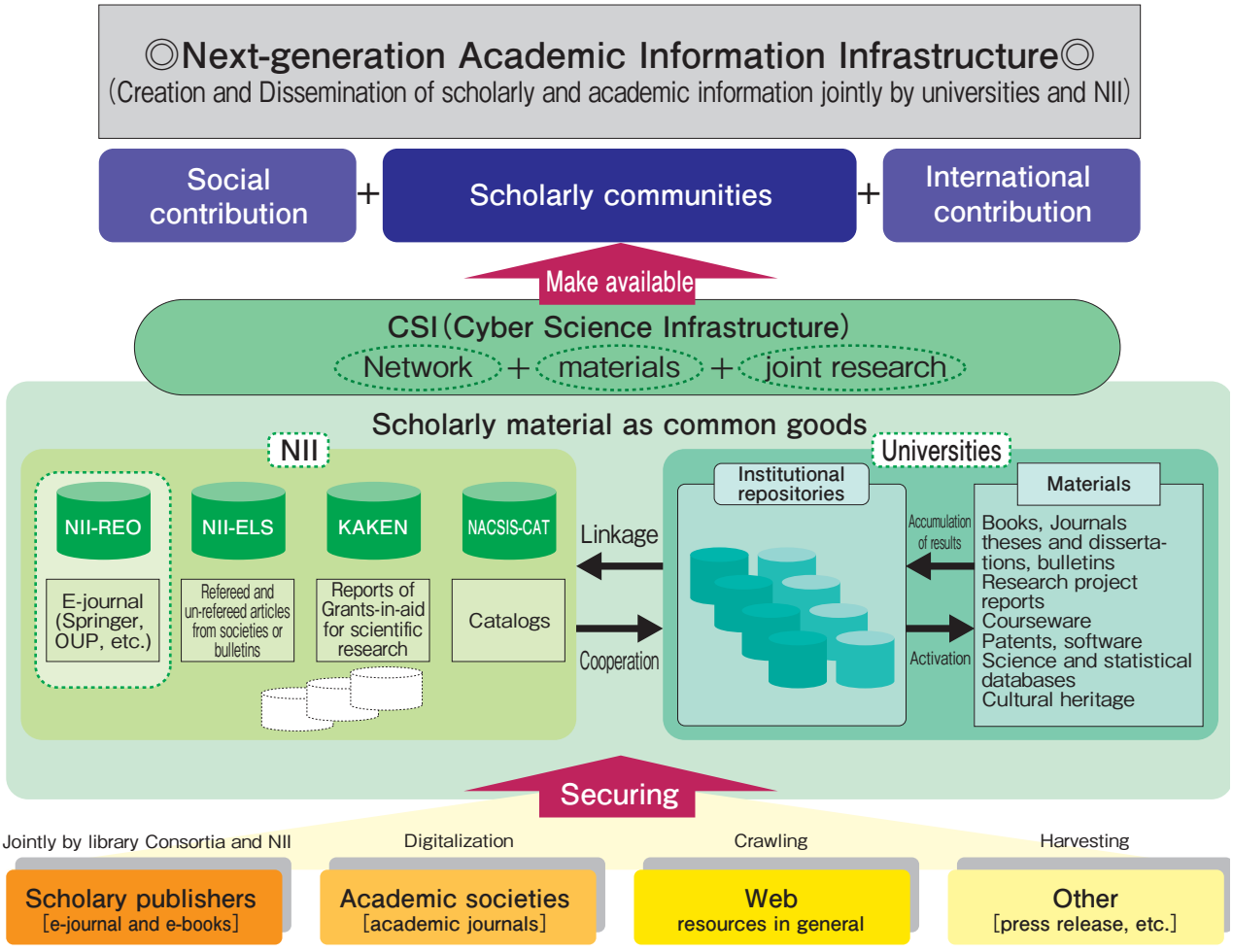
Contact: Center for Grid Research and Development
TEL: +81-3-4212-2857 FAX: +81-3-4212-2803 E-mail: naregi-office@grid.nii.ac.jp

Establishment of Next-Generation Academic Information Infrastructure

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

Establishment of Next-Generation Academic Information Infrastructure

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



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

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

Contact: Scholarly and Academic Information Division
TEL: +81-3-4212-2305 FAX: +81-3-4212-2370 E-mail: infocont@nii.ac.jp

Support for Linkage between Institutional Repositories

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

Background

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

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

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

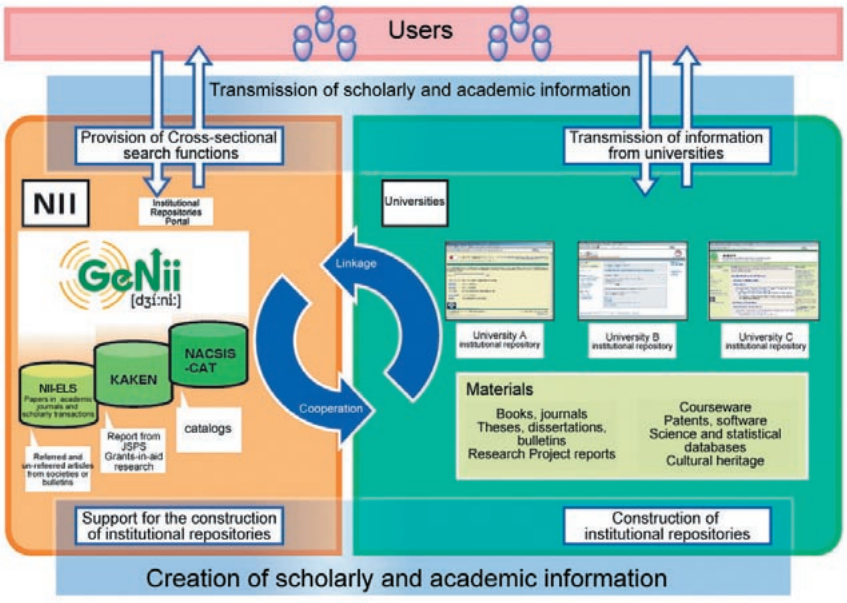
Activities

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

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

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

Tasks entrusted \ FY	FY2005	FY2006	FY2007	FY2008
Area 1 (Development and operation of institutional repositories)	19 institutions	57 institutions	70 institutions	68 institutions
Area 2 (Advanced R&D)	—	22 projects	14 projects	21 projects



Contact: Institutional Repository Desk, Scholarly and Academic Information Division
TEL: +81-3-4212-2350 FAX: +81-3-4212-2375 E-mail:ir@nii.ac.jp

GeNii (NII Scholarly and Academic Information Portal)

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

GeNii is a web-based service offering comprehensive scholarly and academic information created by NII in collaboration with university libraries, academic societies, and researchers.
Currently GeNii presents information in five major areas; (1) academic papers (CiNii), (2) books/journals (Webcat Plus), (3) research results (KAKEN), (4) specialized academic information (NII-DBR), and (5) institutional repositories (JAIRO). These areas feature individual search engines suited to the relevant content, while the GeNii Integrated Search System provides a tool for cross-referenced searching to help users quickly find the information they need.

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

CiNii (NII Scholarly and Academic Information Navigator)

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

- CiNii provides citation information, primarily in Japanese, together with navigation tools for searching both text and citation references.
- Basic search is available to anyone via the internet, while citations and fee-based electronic library content are available to registered users only.
- We are expanding the pool of available data and improving text hit rates by linking various database services, including university institutional repositories, J-STAGE, and Japana Centra Revuo Medicina (Ichushi) Web.
- We are currently promoting intersystem links with university libraries and other facilities by providing search APIs (application program interfaces) such as OpenURL and OpenSearch.

Database volume by content type (as of March 2009)

Content		Items	Links to full text
NII citation index database (CJP)		Bibliographies = 1.47 million Cited papers = 15.94 million	
NII electronic library service (NII-ELS)	Academic journals	Bibliographies, abstracts and papers =2.93 million	All
	University research bulletins	Bibliographies, abstracts and papers= 850,000 (with full text=320,000)	Some
Japanese Periodical Index		Bibliographies = 8.09million	

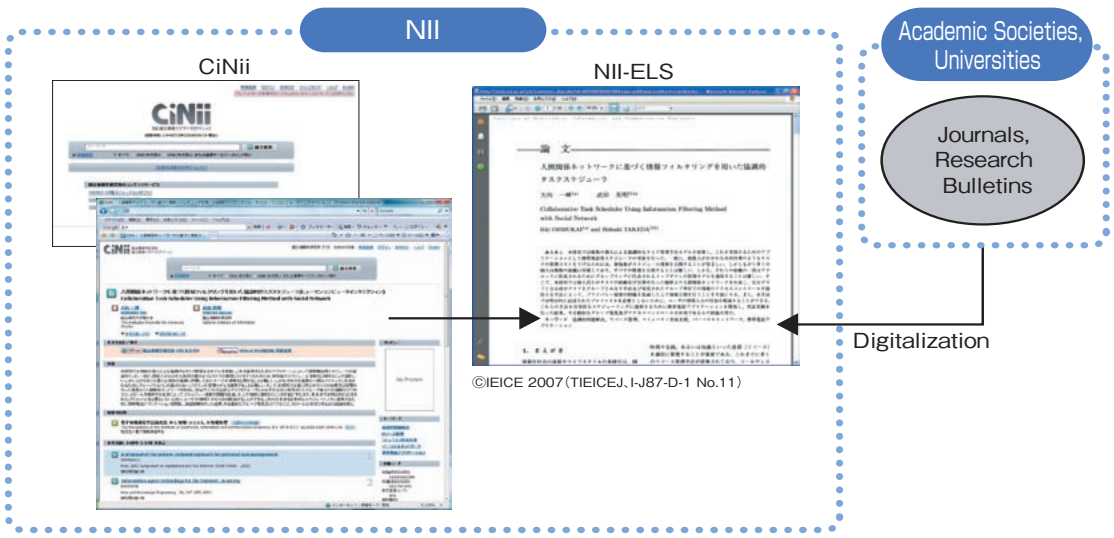
NII Electronic Library Service (NII-ELS)

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

NII-ELS bibliography (as of March 2009)

Participating organizations	Journals (with full text of articles)	Research papers
1,323 (academic societies 305)	3,789	3.25 million

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



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

GeNii (Scholarly and Academic Information Portal)

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

Webcat Plus

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

- With an "Associative search function", you can easily find the books you need.
- Webcat Plus has a comprehensive books/journals catalog database from libraries and other facilities throughout the country, and tables of contents/brief summaries of Japanese and English books.
- You can search among source materials owned by university libraries and among books not stocked in libraries but commercially available.

Database contents (as of March 2009)

Books	Journals
14,230,000	310,000

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

KAKEN (Grants-in-Aid for Scientific Research)

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

- This site presents a brief overview on themes (themes when initially adopted) and results (e.g., reports and reviews) of the research themes funded by grants-in-aid for scientific research from the Ministry of Education, Culture, Sports, Science and Technology and the Japan Society for the Promotion of Science.
- Provides access to the latest scientific information in Japan.
- Research lists of research areas and research themes in individual categories.

Stored documents (as of March 2009) 590,000 items

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

NII-DBR (Academic Research Database Repository)

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

- This site features specialized databases prepared by Japanese academic societies and research groups.
- Cross-searching of two or more databases is possible, in addition to the standard individual database search.

Stored databases (as of March 2009) 1.9 million documents from 29 databases

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

JAIRO (Institutional Repositories Portal)

http://jairo.nii.ac.jp/

- This will enable crossover searches of academic information (research papers published in scholarly journals, academic dissertations, study reports, etc.) accumulated in institutional repositories in Japan.
- Displays statistics on frequently accessed and new content.
- Also provides data including number of monthly accesses, number of annual accesses, and number of searches performed.

Stored content (as of March 2009)

Number of Institutional Repositories	Number of Contents
89	600,000

Contact: Institutional Repositories Desk, Scholarly and Academic Information Division
TEL: +81-3-4212-2350 FAX: +81-3-4212-2375 E-mail:ir@nii.ac.jp

Online Scientific Terms (Sciterm)

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

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

Registered data (as of March 2009)

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

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

Academic Society HomeVillage

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

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

Registered data (as of March 2009)

Participating societies
1,063

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

Catalog Information Service

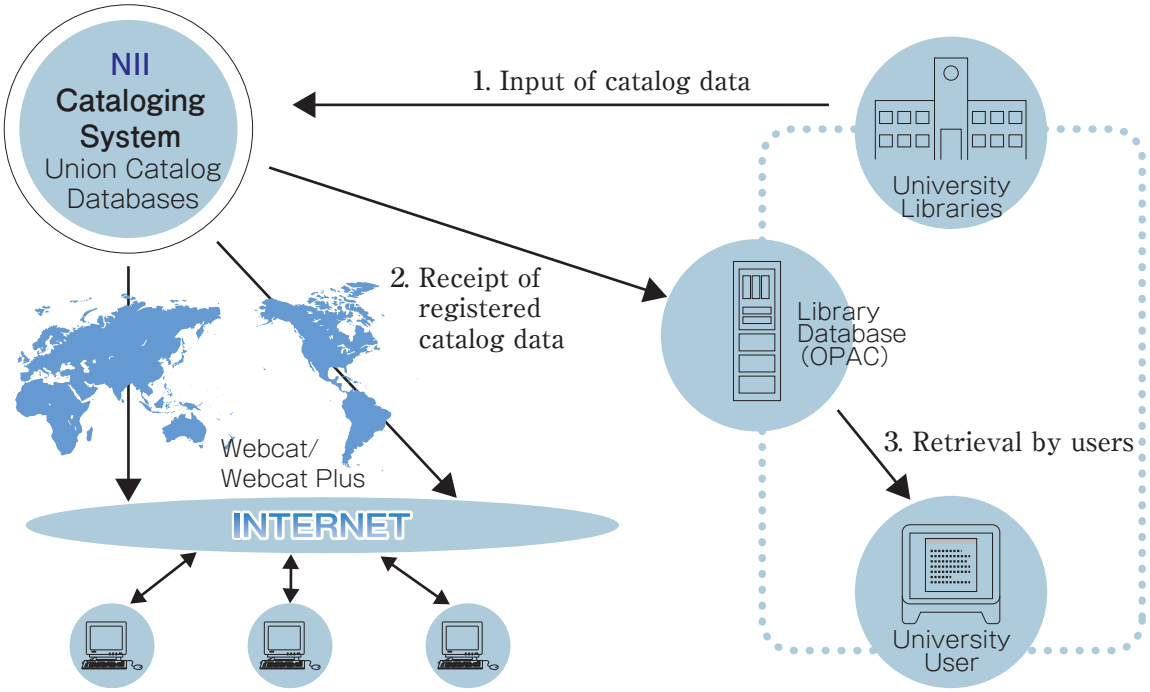
http://www.nii.ac.jp/CAT-ILL/

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

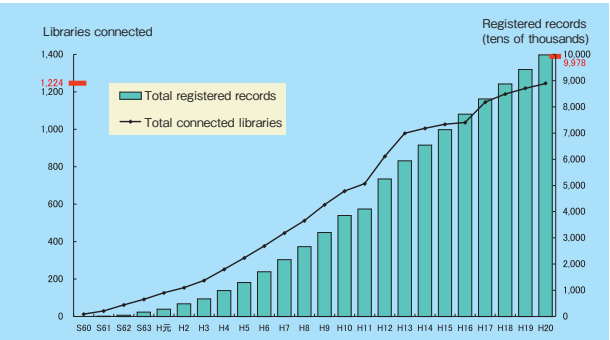
Cataloging System (NACSIS-CAT)

The NACSIS-CAT Cataloging System offers union catalog databases of academic documents (books and serials) held by university libraries and other such institutions throughout the country. These databases were compiled to support scholarly research and can be searched to determine instantly where specific materials are housed. To improve efficiency, standardized cataloging data (MARC) are referred to when constructing databases, and university libraries and other institutions share the work of inputting records online. The System also includes a function for referencing similar databases in other countries (OCLC in the USA, HBZ in Germany).

The union catalog of books and serials consisting of the compiled databases can be freely accessed via the worldwide web online search service (Webcat/Webcat Plus).



Trends in number of libraries connected and number of records registered (as of March 2008)



Number of participating institutions (as of March 2009)

Number of participating institutions	1,224
Domestic	1,117
University:708, Junior college:141, Technical college:58, Inter-University Research Institute Corporation:15, Other:195	
Overseas	107
Asia:79, Europe:27, North America:1	

Frequency of Webcat searches (April 2008-March 2009)

13,700,000

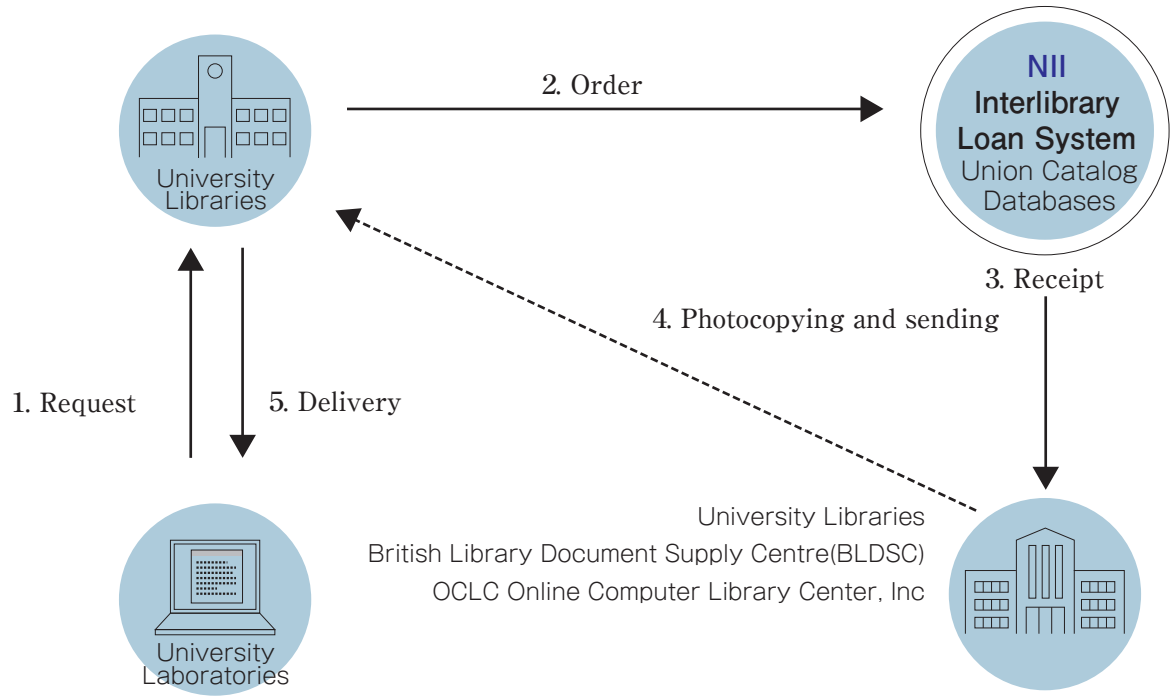
http://webcat.nii.ac.jp/

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

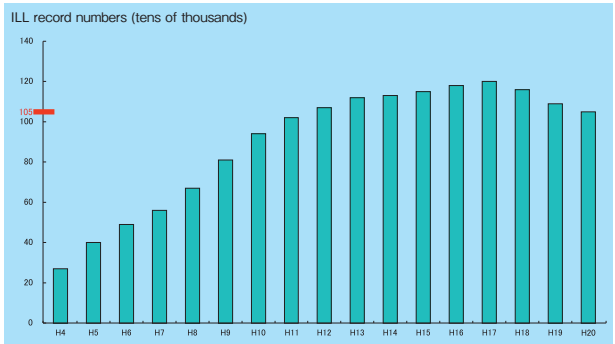
The National Center for Science Information Systems (NACSIS) was the forerunner of the National Institute of Informatics (NII). The acronym NACSIS is still used in the names of some NII services.

Interlibrary Loan System (NACSIS-ILL)

The Interlibrary Loan System (NACSIS-ILL) supports the exchange of books and serialized research dissertations among libraries to facilitate the provision of documents to researchers at universities and other institutions.
The service applies the latest information from the union catalog databases constructed by NACSIS-CAT, resulting in improved efficiency and prompt delivery of documents to users.
Users of the system may also request materials from the British Library Document Supply Centre (BLDSC), and may use the interlibrary loan service between overseas university libraries through collaboration with overseas ILL systems (such as the OCLC system in the US and KERIS in the Republic of Korea).
The efficiency of the system has been enhanced with an offsetting service for ILL document copying and other charges.



State of use of the ILL system (as of March 2009)



User institutions (as of March 2009)

User institutions	1,088
Institutions participating in ILL charge offsetting service	769

Global ILL participating institutions

Japan-US ILL:	Japan 152 US 74
Japan-ROK ILL:	Japan 109 ROK 267

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

NII Repository of Electronic Journals and Online Publications (NII-REO)

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

- The NII Repository of Electronic Journal and Online Publications (NII-REO) archives the content of electronic journals and promotes their use as part of a joint effort with the University Library Consortia to ensure stable, sustainable access to electronic content.
- The terms and conditions applying to use of this content are based on contracts signed with publishers.

Stored content (as of March 2009)

Publisher	Number of titles	Number of articles	Collecting year
IEEE Computer Society	about29	about220,000	1988-2008
Kluwer online	about500	about350,000	1997-2005
Oxford University Press	about150	about850,000	1849-2003
Springer Science+Business Media	about 1,100	about2,090,000	1847-1996

In partnership with the University Library Consortia, the NII is expanding the range of data stored in NII-REO for the following types of documents:

- Retroactively digitized archives of the back issues of scholarly journals published or distributed by major publishers.
- Various collections of electronic data created from source materials (written documents, reports, books, etc.) in the social sciences and humanities.

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

International cooperation of electronic journals

With projects to establish permanent archives of electronic journals drawing global interest, the NII in February 2009 joined the CLOCKSS (Controlled LOCKSS) project initiated primarily by Stanford University in the US.
By serving as an archive node in Asia, the NII will help create this global archive.

【CLOCKSS (Controlled LOCKSS)】

- The large-scale project launched by Stanford University uses the LOCKSS technology developed by Stanford to archive electronic journals.
- The project seeks to establish a stable, sustainable archive of electronic journals based on an internationally distributed dark archive system.
- Plans call for some 12 to 14 archive nodes to be established around the world.
- CLOCKSS Web site
  http://www.clockss.org/clockss/Home

Contact: CLOCKSS Desk, Scholarly and Academic Information Division
TEL: +81-3-4212-2302 FAX: +81-3-4212-2370 E-mail: clockss@nii.ac.jp

Education and Training Programs

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

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

User Training

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

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

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

Advanced Training Programs

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

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

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

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

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

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

Academic Portal Training Course (Nagoya University Hall)

Network Security Technical Training Course
The training program provides the knowledge and skills necessary to implement appropriate security measures required for campus LAN management.

NII Practical Training Course

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

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

Cooperation for User Training Sponsored by Universities

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

Collaboration with Other Organizations

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

Contact: Scholarly and Academic Information Division
TEL: +81-3-4212-2177 FAX: +81-3-4212-2375 E-mail:edu@nii.ac.jp

Research Cooperation

The NII actively promotes research funded by Grants-in-Aid for Scientific Research, joint research with private organizations, and externally funded research (such as commissioned research).

Grants-in-aid for Scientific Research (FY2008) (as of March 2009)

Research Categories	Number	Awarded Amount (thousands of yen)
Specially Promoted Research	1	109,200
Scientific Research (A)	4	46,410
Scientific Research(B)	12	58,850
Scientific Research(C)	11	14,820
Exploratory Research	5	9,700
Encouragement of Young Scientists(A)	3	23,270
Encouragement of Young Scientists(B)	10	14,300
Encouragement of Young Scientists(launch of activities)	4	5,798
Scientific Research in Priority Areas	12	387,808
Special Purposes	4	3,300
Publication of Scientific Research Results	1	4,800
Total	67	678,256

Ministry of Health, Labour and Welfare Grants-in-Aid for Scientific Research (FY2008) (as of March 2009)

	1	20,000

Adjustment cost for the promotion of science and technology (FY2008) (as of March 2009)

	1	99,588

University-Industry Cooperation and Collaboration (FY2008) (as of March 2009)

	Number	Amount Received (Thousands of yen)
Joint Research with the Private Sector, etc.	11	103,093
Commissioned Research	23	299,527
Endowments	25	29,915

Collaborative Research

As an inter-university research institution, the NII provides opportunities for mutual exchange and research among researchers in universities and research institutions in Japan, while actively promoting many collaborative research projects. As of February 2009, it carried out 90 collaborations and accept a member of collaborative scholars of a total of 410.

NII Visiting Researchers (FY2008) (as of March 2009)

区分	number
Visiting Researchers(Foreign Research Scholars)	8
〃 (JSPS Postdoctoral Fellowship for Foreign Researchers)	4
〃 (Others)	12
Cooperative Scholars	1
Requested Researchers*	58
Project Researchers	49
Special Joint Researchers	14
Total	146

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

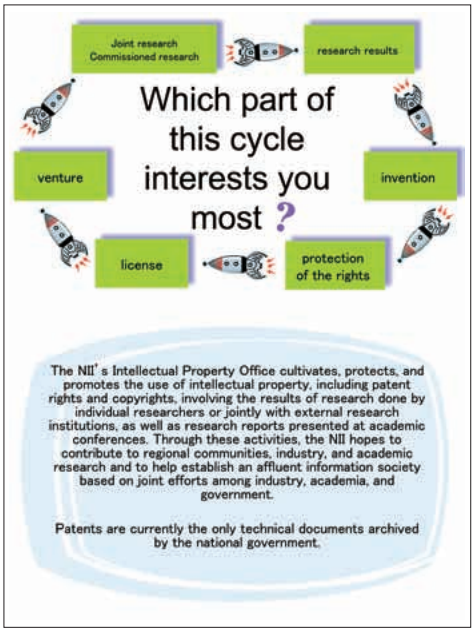
Contact: Research Promotion Division
Research Support and General Affairs Team
TEL: +81-3-4212-2105, 2115
FAX: +81-3-4212-2180
E-mail:kaken@nii.ac.jp

Intellectual Properties

The NII creates, collects, and manages intellectual property and promotes the use of this intellectual property to contribute to society.

Total Number of Inventions and Applications for Patents
(total number sincce FY2004) (as of March 2009)

Total	65
Attribution：Organization Attribution	62
：Individual Attribution	3
Applications Number	78 〈Domestic Number 61、foreign number17〉
Registration number	5 （Domestic Number 4、foreign number 1）



Contact: Intellectual Property Office
TEL: +81-3-4212-2123
FAX: +81-3-4212-2180　E-mail：chizai_web@nii.ac.jp

NII Library

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

Inventory, Magazine titles (end of March 2009)

Document type	Books	Bound journals	Journals (in title)
Domestic documents	9,821	7,694	207
Foreign documents	10,600	7,577	202
Total	20,421	15,271	409

Major on-line journals and databases

	Service	Publisher
1	ACM Digital Library	Association for Computing Machinery
2	APS online	American Physical Society
3	CUP online	Cambridge University Press
4	IEL	IEEE,IEE
5	MathSciNet	American Mathematical Society
6	OUP online	Oxford University Press
7	Springer Link	Springer
8	Science Direct	Elsevier B.V.
9	Wiley Interscience	John Wiley & Sons.
10	IEICE	The Institute of Electronics, Information and Communication Engineers

Facility, Equipment

	Reading room	Stack room
Area	140m^2	271m^2
Seats	8	3
PC for search	2	
Other equipment	Automatic Book Circulation Machine (Sumitomo 3M ABC-III)	Micro reader printer (Konika Minolta SP7000)
	Copier (DocuCentre-Ⅲ C2200)	

Reading room1

Reading room2

Stack room

Subscribed journals

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

International Exchange

As Japan's sole comprehensive academic research institute in the field of informatics, the NII presents research results to the world and strives to contribute globally through efforts related to informatics – by promoting active international exchange among researchers and students and helping to establish informatics research bases – as a partner in various international joint projects.

Global Liaison Office (GLO)

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

International Exchange Agreement (MOU)

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

Also, "MOU Grant" and "NII International Internship Program" support dispatch and invitation of researchers and students between MOU institutes. As of April 2008, MOU institutes/universities are over 56 in 16 countries in Asia, Oceania, North America, and Europe.

MOU on cooperative research: (as of April 2009)

(For research cooperation) (Number: 49 Institutes)	
Republic of Singapore	School of Computing, National University of Singapore
Kingdom of Thailand	Chulalongkorn University
	Asian Institute of Technology
	Kasetsart University
	National Electronics and Computer Technology Center, National Science and Technology Development Agency (NECTEC)
Republic of Korea	Korea Institute of Science and Technology Information
	Seoul National University, Department of Computer Science and Engineering
People's Republic of China	Institute of Computational Mathematics and Scientific/Engineering Computing, Academy of Mathematics and System Sciences, Chinese Academy of Sciences
	School of Electronics and Information Engineering, Tongji University
	Department of Automation, School of Information Science and Technology, Tsinghua University
	School of Electronics Engineering and Computer Science, Peking University
People's Republic of Bangladesh	University of Dhaka
Socialist Republic of Viet Nam	International Research Center MICA Hanoi University of Technology
	Hanoi University of Technology
	Vietnam National University of Ho Chi Minh City
United States of America	School of Engineering and Computer Science University of Michigan-Dearborn
	College of Engineering, University of Washington, Seattle
	University of Maryland, Department of Computer Science
	New Jersey Institute of Technology
Canada	University of Waterloo, Faculty of Mathematics
	University of Alberta, Faculty of Science, Department of Computing Science, Alberta Ingenuity Centre for Machine Learning (AICML)
	School of Computer Science, McGill University
Ireland	The University of Limerick (Lero - the Irish Software Engineering Research Centre)
Republic of Italy	Torino University, Department of Informatics
United Kingdom of Great Britain and Northern Ireland	Department of Computer Science Faculty of Engineering Science, University College London
	Faculty of Mathematics and Computing, Open University
	University of Bath
	University of Bristol
	Department of Computing at Imperial College London
	The Computing Laboratory, University of Oxford
Kingdom of the Netherlands	Centre for Mathematics and Computer Science (CWI)
Czech Republic	Czech Technical University in Prague
Federal Republic of Germany	Faculty of Applied Informatics, University of Augsburg
	German Research Center for Artificial Intelligence (DFKI)
	The Faculty of Applied Sciences of the University of Freiburg
	The RWTH Aachen University (Faculty of Mathematics, Computer Science and Natural Sciences)
(For development and operational cooperation) (Number: 7 Institutes)	
Republic of Korea	Korea Education & Research Information Service
United States of America	North American Coordinating Committee on Japanese Library Resources
	Institute for Scientific Information, Inc.
	Association of Research Libraries (ARL)
United Kingdom of Great Britain and Northern Ireland	The British Library
Federal Republic of Germany	Hochschulbibliothekszentrum des Landes Nordrhein-Westfalen (German only)
Europe	DANTE (Delivery of Advanced Network Technology to Europe) (Development and operational cooperation)

MOU Grant/Non- MOU Grant

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

In FY 2008, the decision was made to dispatch 19 researchers to a total of eight nations and to accept 38 researchers from a total of 13 nations under both of these grant systems. (The total number of nations to which researchers are dispatched includes multiple countries visited by the same researcher on a single assignment.)

International Exchange

Accepting students from abroad through an international internship program

As part of its student exchange activities with institutions with which it has concluded MOUs, from FY 2005, the NII has accepted overseas students through an international internship program.
The goal of this international internship program is to provide graduate students (in master's and Ph.D courses) from universities and research institutions that have concluded MOUs with the NII the opportunity to take part in research and to receive guidance from professors at NII. Students enroll for two to six months, depending on their research interests.
In FY 2008, the NII accepted a total of 83 interns from institutions with which it had concluded MOUs in ten countries: Thailand, Bangladesh, Republic of Korea, China, Vietnam, Canada, United Kingdom, Czech Republic, Germany, France and Australia.
In addition, the decision has been made to use non-MOU grants to accept two interns from non-MOU institutions in the two nations of Germany and France.

Names of universities and other institutions sending interns during the 2008 fiscal year and their countries:

Name of University / institution	Number	Country
【International Internship Program】		
Chulalongkorn University	6	Kingdom of Thailand
Asian Institute of Technology	6	
Kasetsart University	1	
NECTEC	3	
Seoul National University	3	Republic of Korea
Tsinghua University	3	People's Republic of China
Tongji University	3	
University of Dhaka	1	People's Republic of Bangladesh
Hanoi University of Technology	6	Socialist Republic of Viet Nam
Vietnam National University of Ho Chi Minh City	5	
McGill University	2	Canada
University of Bath	1	United Kingdom of Great Britain and Northern Ireland
University of Oxford	1	
University of Augsburg	3	Federal Republic of Germany
Czech Technical University in Prague	2	
The RWTH Aachen University	1	
Institut National Polytechnique de Grenoble (INPG)	8	French Republic
Universite Joseph Fourier-Grenoble 1	7	
Institute National Polytechnique de Toulouse (INPT)	4	
Universite de Nantes	3	
Pierre and Marie Curie University (Paris6)	6	
National ICT Australia Limited (NICTA)	8	Australia
【Non-MOU Grant】		
Technische Universität Bergakademie Freiberg	1	Federal Republic of Germany
Université Paris-Dauphine (Paris9)	1	French Republic
Total	85 interns	

Intercommunion of researchers

Acceptance of researchers from abroad (FY2008)

Program		Number of researchers
Japan Society for the Promotion of Science (JSPS)*1	Postdoctoral Fellowships for Foreign Researchers	3
	Postdoctoral Fellowships for Foreign Researchers (Short-term;for researchers from Western countries)	2
	Invitation Fellowship Program for Research in Japan	0
Other researchers accepted (visiting researchers, visiting professor [full-time])*2		48

*1 The figures above include those for personal accepting from the previous fiscal year.
*2 The figures above include researchers accepted by the MOU/Non-MOU Grant and the number of acceptance is 30 researchers.

Overseas Assignment (FY2008)

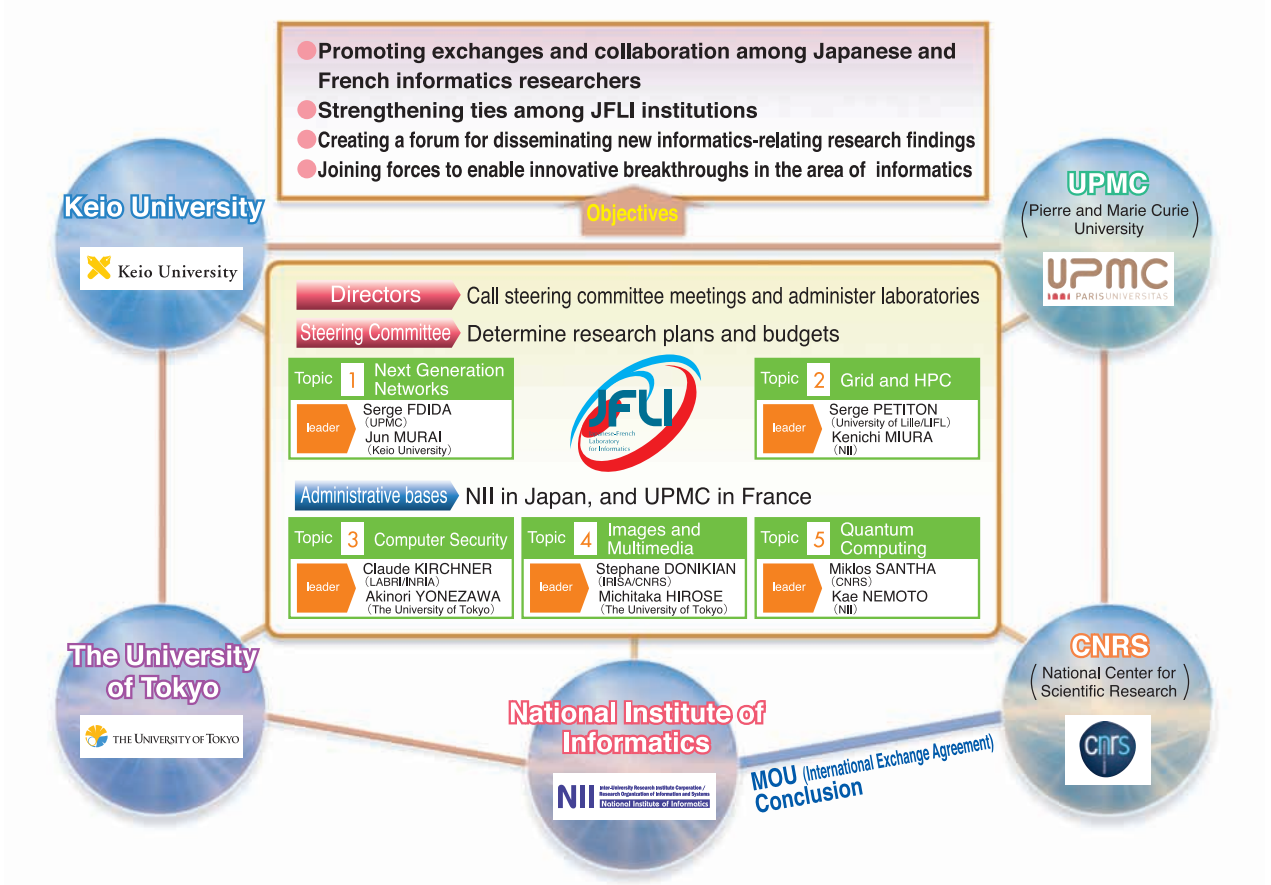
Faculty researchers are also dispatched as visiting scholars overseas under the Overseas Assignment System for Researchers and Other Personnel, established for purposes including improving the research or operations capabilities of faculty and other personnel.

Program	number
Overseas Assignment System for Researchers and Other Personnel	2

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

Japanese-French laboratory for Informatics (JFLI)

Japanese informatics researchers are involved in all kinds of exchanges with their French counterparts, pursue active collaborations with National Center for Scientific Research (CNRS) and other French institutes, and these initiatives continue to make significant headway and achieve solid results.
This idea of further merging our separate facilities into a collaborative framework that promotes closer research ties centering on a single collaborative institute is the concept behind the Japanese French Laboratory for Informatics (JFLI).
By addressing the five basic themes of next-generation networks, grid and High-Performance Computing (HPC), computer security, images and multimedia, and quantum computing, the five-institute JFLI will not only further strengthen computer science research between France and Japan, it will also serve as a forum for the exchange and dissemination of new findings among informatics researchers.
Based on collaboration among five research institutes in Japan and France, the JFLI is established in National Institute of Informatics in Japan and in Pierre and Marie Curie University (UPMC) in France.

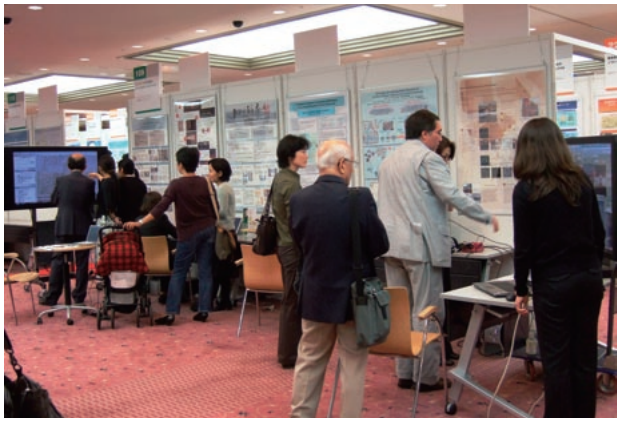


Dissemination of Research Results

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

Open House

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



NII Open House (June, 2008)

Symposia and Study Meetings

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

Presentations

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

Library Fair & Forum (November, 2008)

Open Lectures and Seminars

NII also holds open lectures and seminars.

■NII Public Lectures

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

■Karuizawa Saturday Salon

(September, 2008)

The NII hosts seminars on issues and topics related to informatics for both researchers and the general public several times a year at the International Seminar House for Advanced Studies (Inose lodge: Karuizawa, Nagano Prefecture).

- videos of lectures and recitals are available on the NII website * in Japanese
- Publication of Karuizawa Doyo-Konwakai Koenshu: Chi to Bi no Harmony" (Collection of Lectures from the Karuizawa Saturday Salon: Harmony of Intelligence and Beauty") * in Japanese
(http://www.nii.ac.jp/karuizawa/)

Karuizawa Saturday Salon (June, 2008)

Publications

NII publishes books and periodicals detailing its research findings.

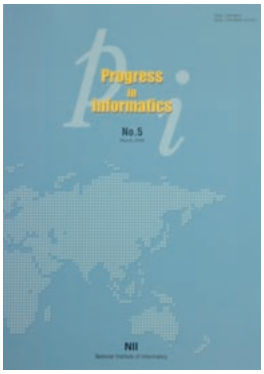
■**NII Series (Maruzen Library)**

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

NII Series (Maruzen Library)

■**Progress in Informatics**

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



Progress in Informatics

■**NII Technical Report**

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

NII Technical Report

■**Karuizawa Doyo-Konwakai Koenshu: Chi to Bi no Harmony (No.1-No.6)**

("Collection of Lectures from the Karuizawa Saturday Salon: Harmony of Intelligence and Beauty") * in Japanese

This is a collection of lectures from the Karuizawa Saturday Salon (held since the 2000 fiscal year), and donated to university library and prefectural library, etc. (http://www.nii.ac.jp/karuizawa/harmony.shtml)

Karuizawa Doyo-Konwakai Koenshu: Chi to Bi no Harmony

Public information magazine

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

NII Today No. 22

NII Today No. 23

NII Today No. 24

NII Today No. 25

NII Today No. 26

NII Today No. 27

NII Today No. 28

NII Today No. 29

NII website/E-mail Newsletter

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

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

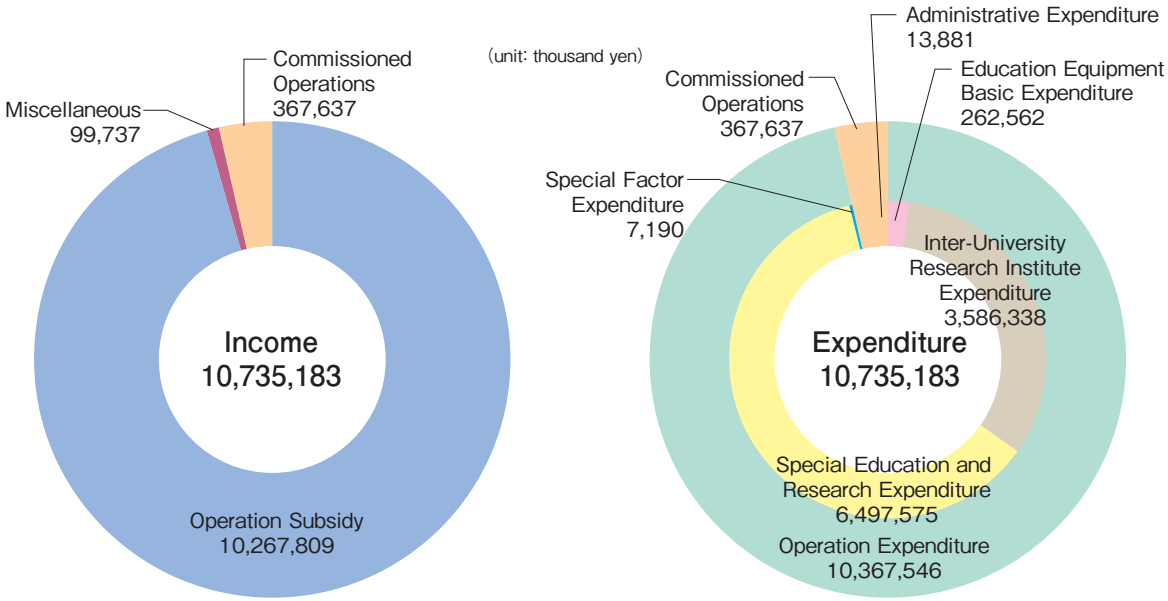
Contact: Publicity and Dissemination Team, Planning and Promotion Strategy Department
TEL: +81-3-4212-2135 FAX: +81-3-4212-2150 E-mail:kouhou@nii.ac.jp

Staff/Budget

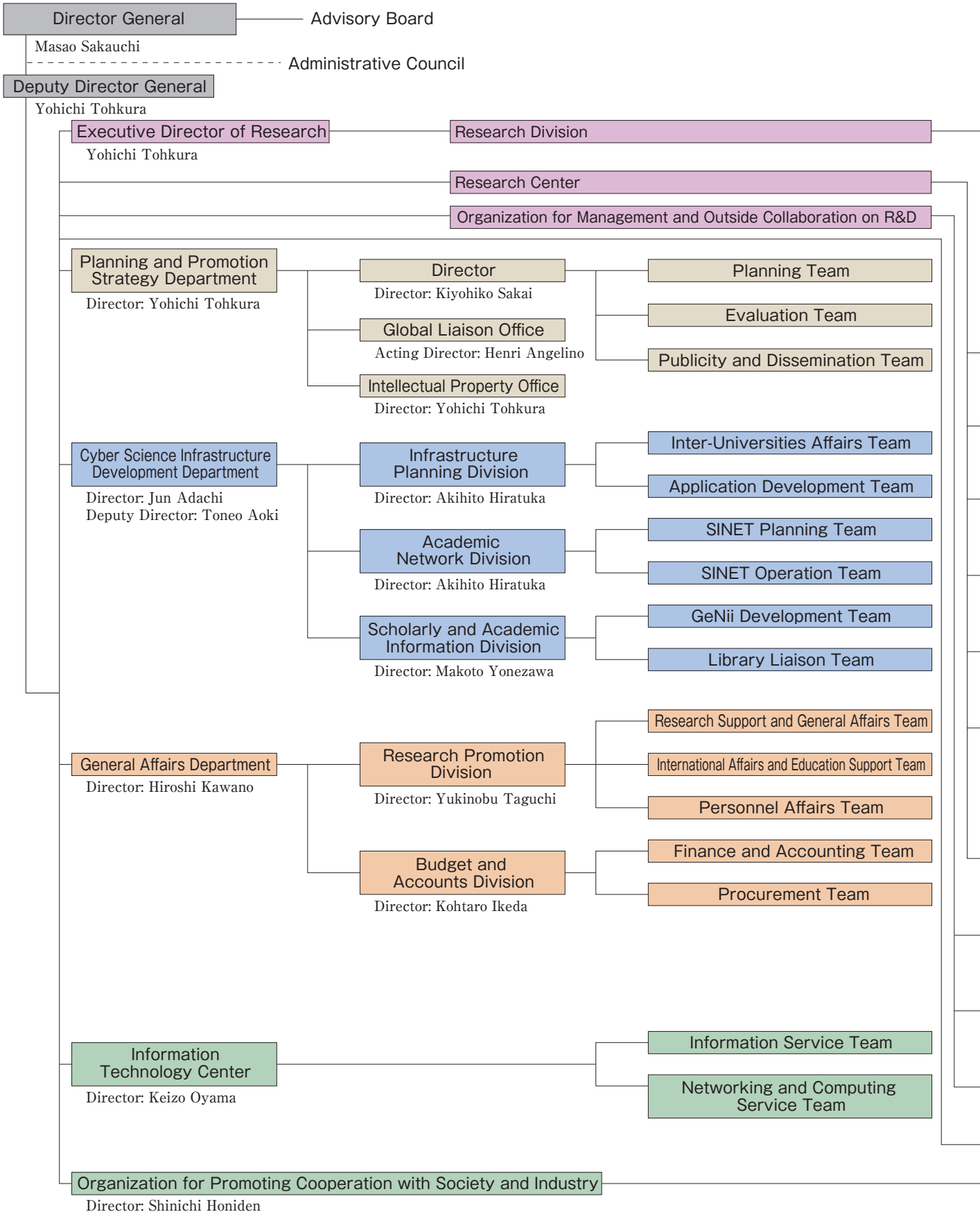
Staff (as of April 1, 2009)

	Director General	Deputy Director General	Professors	Associate Professors	Assistant Professors	Assistant	Subtotal	Other Employees	Total
Full-time Employees	1	1	37	31	12		82	61	143
Visiting Professors etc.			57	27	1		81		81
Organization for Promoting Cooperation with Society and Industry			11				11		11
Coordinate Professors			3	1			4		4
Specially Appointed Professors etc. (Project-based)			8	9	3		20		20
Other Outside Researchers									82
Support Staff									67
Graduate Students									131

Budget (F.Y.2009)



Organization



Principles of Informatics Research Division

Director: Asao Fujiyama

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

Information Systems Architecture Science Research Division

Director: Shinichi Honiden

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

Digital Content and Media Sciences Research Division

Director: Keizo Oyama

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

Information and Society Research Division

Director: Noboru Sonehara

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

Center for Grid Research and Development

Director: Kenichi Miura

Research and Development Center for Informatics of Association

Director: Akihiko Takano

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

Director: Shinichi Honiden

Research Center for Community Knowledge

Director: Noriko Arai

Visiting Professor	Angelino, Henri (Full -time)		Houle, Michael E (Full -time)	
	Kiyoshi Agusa	Hideharu Amano	Keijiro Araki	Hiroki Arimura
	Anthony Finkelstein	Katsushi Ikeuchi	Hiroshi Ishiguro	Toru Ishida
	Katsuro Inoue	Kazunori Ueda	Hitohide Usami	Atsushi Ohnishi
	Hisamichi Okamura	Mizuhito Ogawa	Manabu Okumura	Masanao Ozawa
	Kyo Kageura	Kunio Kashino	Mitsuhiro Kishimoto	Masaru Kitsuregawa
	Yasuo Kuniyoshi	Shu Kuramoto	Sadao Kurohashi	Jiro Kokuryo
	Takashi Gojobori	Kazunobu Konishi	Naohisa Komatsu	Motoshi Saeki
	Jennifer Marjorie Corbett	Gerard Milburn	Sumio Sugano	Masaaki Sugihara
	Tatsuya Suda	Sebasitian Uchitel	Masato Takeichi	Yuzuru Tanaka
	Yoshiaki Tanaka	Syun Tsuchiya	Yuichi Nakamura	Yoshiki Niwa
	Bashar Nuseibeh	Teruo Higashino	Yoshiaki Fukazawa	Hideo Matsuda
	William John Munro	Shinichi Mineo	Günter Müller	Kazuaki Murakami
	Hiroshi Yasuda	Hayato Yamana	Yoshinori Yokoyama	Katsuya Watanabe
Visiting Associate Professor	Satoshi Akutsu	Takeo Igarashi	Ichiro Ide	Koji Eguchi
	Shingo Oue	Haruhiko Kaiya	Ken Kaneiwa	Eiji Kamioka
	Hideaki Kikuchi	Takashi Koga	Yoichi Sato	Jin Song Dong
	Kenjiro Taura	Koichi takeuchi	Tao Zhang	Keita Tsuji
	Kazushige Terui	Takeshi Naemura	Yuko Noguchi	Takahiro Hara
	Takayuki Fujino	Yutaka Matsuo	Mio Murao	Masaharu Yoshioka
	Hironori Washizaki	Youdai Watanabe		
Visiting Assistant Professor	Masashi Inoue			
Coordinate Professor	Satoshi Tojo	Taisuke Sato	Yasuo Tan	
Coodinate Associate Professor	Tsuyoshi Murata			

Research and Development Center for Academic Networks

Director: Shigeki Yamada

SINET Promotion Office

Director: Shunji Abe

Research and Development Center for Scientific Information Resources

Director: Hideaki Takeda

Visiting Professor		Shinichi Iwasaki	Shiro Usui	Kazutoshi Eguchi
		Mitsuo Kawato	Tsuyoshi Kitani	Keiichi Kubota
		Madoka Tsuchiya	Akihiro Hada	Takashi Hanazawa
		Akira Maeda	Hiroshi Miyabe	

Organization for Science Network Operations and Coordination

Director: Masao Sakauchi

Organization for Scientific Resources Operations and Coordination

Director: Masao Sakauchi

Professor (by Special Appointment)		Shuichi Itahashi	Haruki Ueno	Ryusuke Kawai
		Hironobu Kuruma	Kenji Taguchi	Hideki Tanaka
		Toshihiko Tsumaki	Takako Nakatani	Masami Nakamura
		Yasumasa Baba	Shigetoshi Yokoyama	
Associate Professor (by Special Appointment)		Yoshinao Isobe	Toshiyuki Kataoka	Fumihiro Kumeno
		Kei Kurakawa	Eisaku Sakane	Makoto Nonaka
		Yayoi Hirose	Yuzo Marukawa	
Assistant Professor(by Special Appointment)		Takeshi Abekawa	Rihoko Inoue	Atsuto Kubo
		Kenji Tei		
Project Assistant		Ryuji Masukawa		

Organization for Value Creation in Informatics

Collaborative Research Unit

Facilities / Location

National Center of Sciences

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

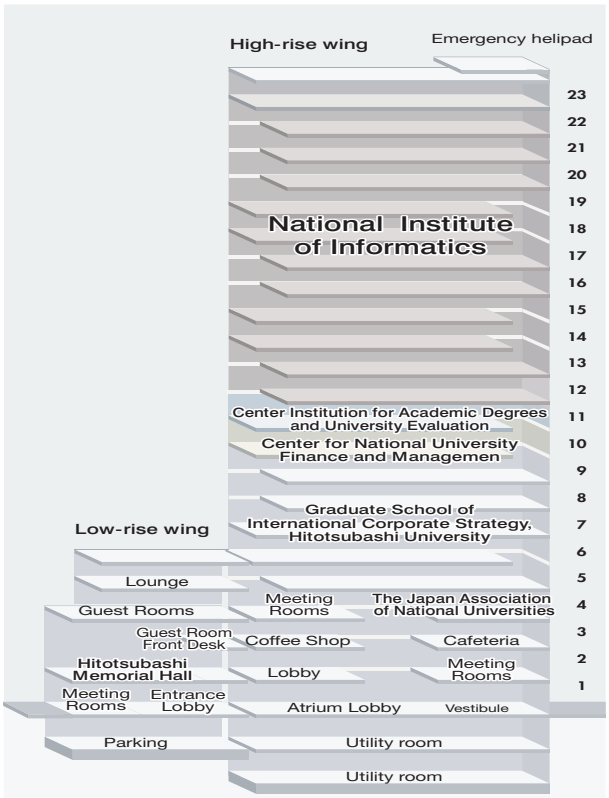
National Center of Sciences

Hitotsubashi Memorial Hall

National Institute of Informatics (NII)

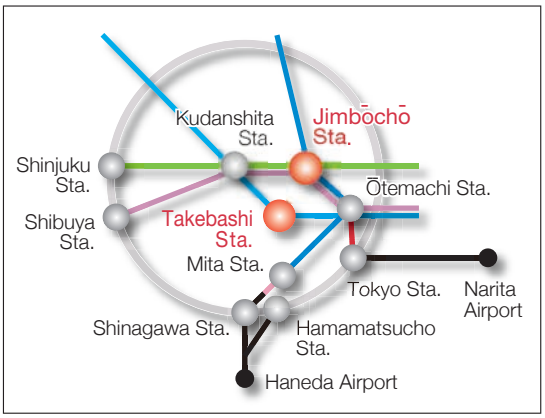
http://www.nii.ac.jp/

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

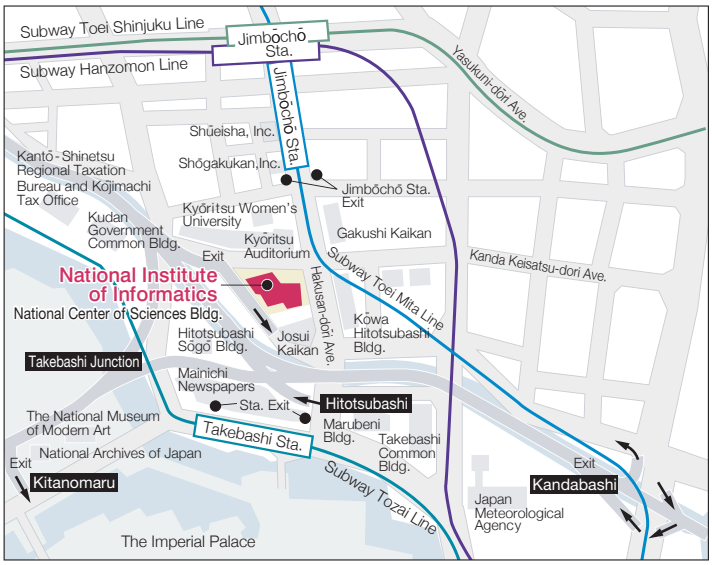


National Institute of Informatics
Site area : 6,842m² (Occupied by NII : 3,036m²)
Floor space : 40,585m² (Occupied by NII : 18,145m²)

Route Map



Subway Toei Shinjuku Line
Subway Hanzomon Line
Subway Toei Mita Line
Subway Tozai Line



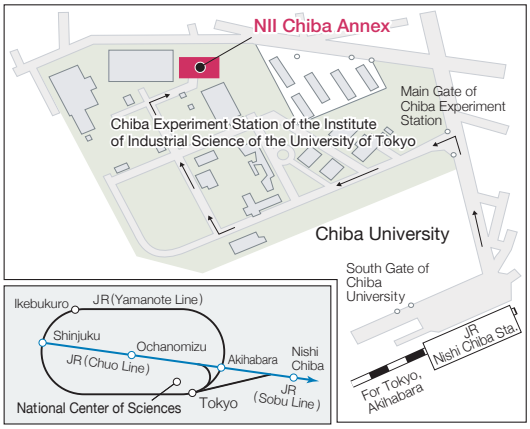
Chiba Annex (Inage-ku, Chiba City)

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

Chiba Annex

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

Guide Map



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

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

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

Uses
1) Domestic and international academic conferences, seminars, etc.
2) Public lectures and social gatherings, etc.
3) Research and training of NII researchers and staff.

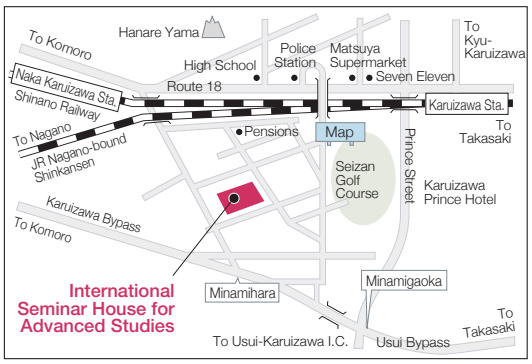
Seminar at the International Seminar House for Advanced Studies

International Seminar House for Advanced Studies Inose Lodge

http://www.nii.ac.jp/index.php?action=pages_view_main&page_id=494&lang=english

1052-471, Okan Minamihara Nagakura, Karuizawa, Karuizawa-cho, Kita Saku-gun, Nagano 389-0111
TEL: +81-267-41-1083 FAX: +81-267-41-1075

Guide Map



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

Contact: Finance and Accounting Team, Budget and Accounts Division
TEL: +81-3-4212-2076
E-mail : shikei@nii.ac.jp

Inter-University Research Institute Corporation
Research Organization of Information and Systems
National Institute of Informatics
NII