NII

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

National Institute of Informatics

National Institute of Informatics
2011

Weaving Information into Knowledge

As Japan's only general academic research institution seeking to create future value in the new discipline of informatics, 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 through 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 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.

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, NII contributes to informatics development by creating future value (ranging from theoretical and methodological work through applications) throughout the discipline.

International research activities

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. NII also engages in the development of an infrastructure for international distribution of scientific information and international academic networks.

Social and public contributions

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.

Research

Informatics is a new academic area based not only on computer science and information technology, but on the human, social, and life sciences. 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 international research activities and operations. NII has established four research divisions, eight research centers, the Organization for Management and Outside Collaboration on R&D, and the Collaborative Research Unit.

Main Research Area

Creating future value

Create the technology and value needed for the world of the future.

- Quantum information processing
- Analysis and modeling using large-capacity sensor data

Social and public contributions

Knowledge in informatics adds new color to society.

- IMAGINE
- NetCommons

Integrated informatics

Achieve new discoveries through partnerships in different fields.

- Genome analysis
- Integrated data infrastructure for human and social sciences

Partnerships among industry, government, and the academic community

A place for connecting the theoretical frameworks developed in universities with the practical aspects of industry.

- Human resources development using top systems engineers
- Sophisticated business, such as teaching materials between the sites

Research Division

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.

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.

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.

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.

Research Center

Center for Grid Research and Development

Develop and provide NAREGI Grid Middleware for sharing computing resources and data within the research community.

Research and Development Center for Informatics of Association

Develop and provide IMAGINE – Federated Associative Search for Heterogeneous Information Resources as an outcome of R&D for the Generic Engine for Transposable Association (GETA).

Strategic Research Projects Incubation Center

Provide organization and resources for important agenda in informatics research that require organizational support.

Research and Development Center for Academic Networks

Set up a network and electronic authentication infrastructure for use in CSI, benefiting from cutting-edge R&D in network development technology.

Research and Development Center for Scientific Information Resources

Encourage the creation and sharing of digital content being used in CSI through R&D in digital content processing technology.

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

Develop TOPSE and TOPRE by integrating research, practical application, and education in advanced software engineering.

Research Center for Community Knowledge

Develop the next-generation knowledge & information sharing infrastructure by building the information sharing infrastructure, named NetCommons and Researchmap.

Global Research Center for Quantum Information Center

Promote activities such as cutting-edge research and personnel development to establish NII as a world-class international hub for quantum information.

Grand Challenge

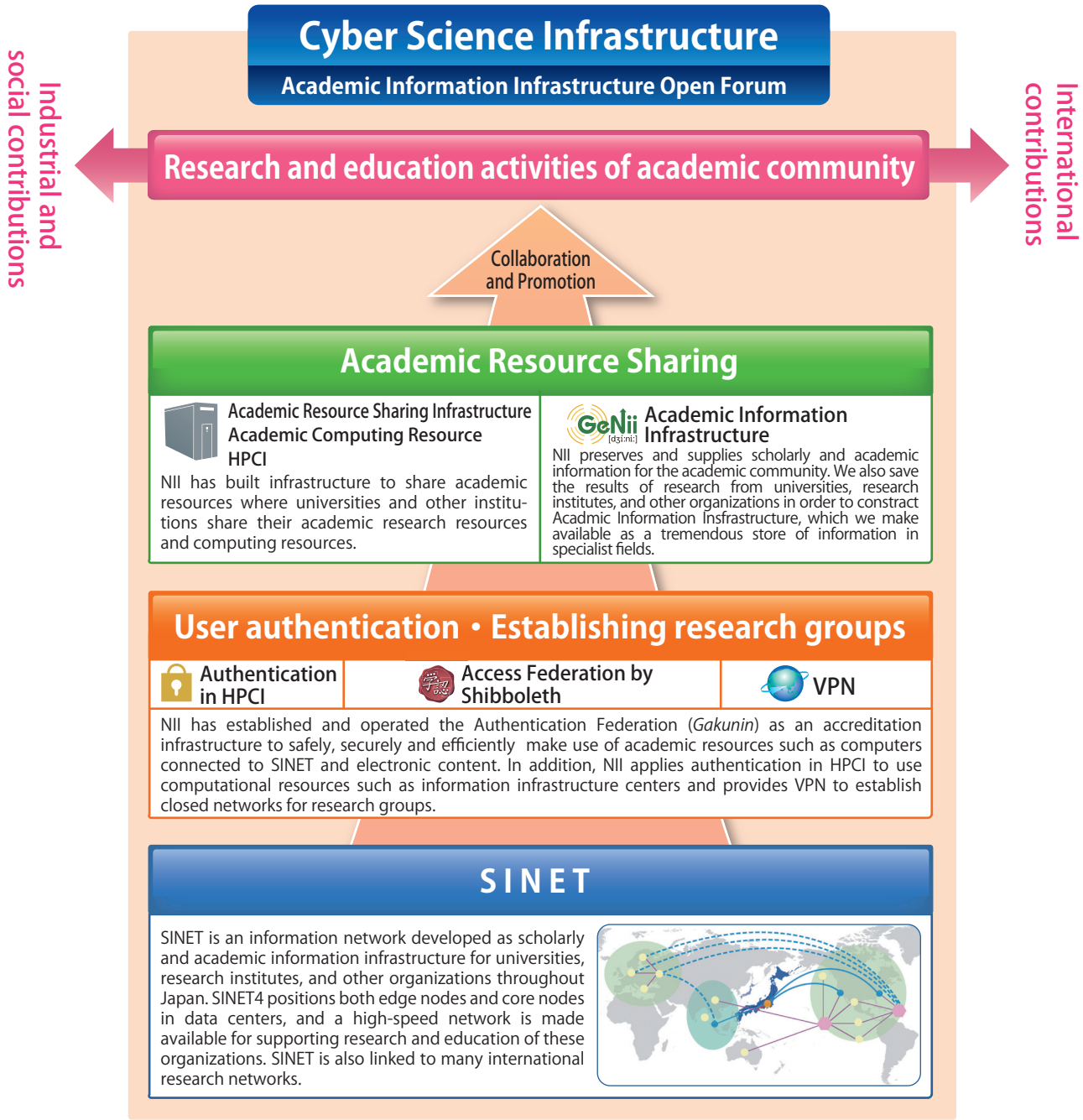
NII promotes studies on the following topics that may lead to breakthroughs in informatics.

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

Consolidation of Cyber Science Infrastructure (CSI)

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 Japanese 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 NII, the university IT centers and other organizations**
2. **Establishment of the infrastructure for next-generation scientific resources through cooperation between NII, university libraries, academic societies and other organizations**



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.

International Activities

The National Institute of Informatics (NII) actively promotes the conclusion of International Exchange Agreements (MOU, memorandum of understanding) with overseas universities and research institutions. Among institutions that have concluded MOUs, NII also holds exchange activities such as international joint research projects and interactions between researchers and students. To ensure the effectiveness of these research exchanges, NII has established systems such as the "MOU Grant" and "NII International Internship Program, and promotes research exchanges with overseas universities and other institutions in a wide range of research fields. NII promotes research exchanges through coordination and cooperation, in particular, through the NII Shonan Meeting in the Asian region, and European-based research institutes such as the Japanese-French Laboratory for Informatics (JFLI), and the German Academic Exchange Service (DAAD) program.

Graduate Education

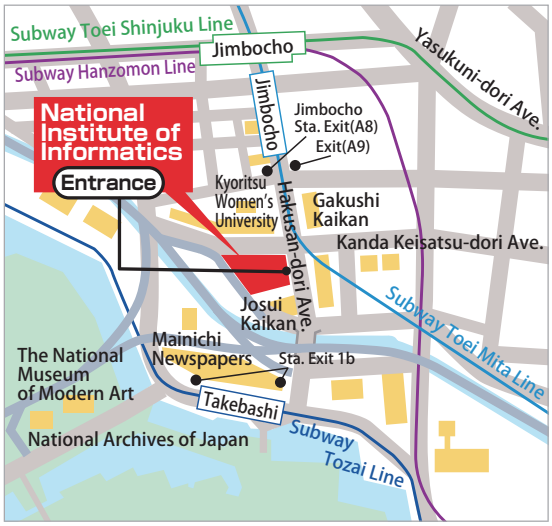
NII joined the Graduate University for Advanced Studies and established the Department of Informatics to provide graduate education (5-year and 3-year Ph.D. programs). The department covers six research areas: Foundations of Informatics, Information Infrastructure Science, Software Science, Multimedia Information Science, Intelligent Systems Science, and Information Environment Science. NII also accepts excellent students from overseas. In addition, NII is cooperating in the provision of graduate education to graduate students pursuing Master's or Ph.D. degrees at many universities.

Number of Students (March 2011)

	Domestic	Outside the country	Total
The Graduate University for Advanced Studies	47	26	73
Other graduate schools	53	21	74

Organization

- Director General
  - Advisory Board
  - Administrative Council
- Deputy Director General
  - Research Division
    - ●Principles of Informatics Research Division ●Information Systems Architecture Science Research Division
    - ●Digital Content and Media Sciences Research Division ●Information and Society Research Division
  - Research Center
    - ●Center for Grid Research and Development
    - ●Research and Development Center for Informatics of Association
    - ●Strategic Research Projects Incubation Center
    - ●Research and Development Center for Academic Networks
    - ●Research and Development Center for Scientific Information Resources
    - ●GRACE Center : Center for Global Research in Advanced Software Science and Engineering
    - ●Research Center for Community Knowledge
    - ●Global Research Center for Quantum Information Center
  - Organization for Management and Outside Collaboration on R&D
    - ●Organization for Science Network Operations and Coordination
    - ●Organization for Scientific Resources Operations and Coordination
    - ●Organization for Value Creation in Informatics
  - Collaborative Research Unit
  - Planning and Promotion Strategy Department
    - ●Director ●Global Liaison Office ●Intellectual Property Office ●Research Strategy Office
  - Cyber Science Infrastructure Development Department
    - ●Academic Infrastructure Division ●Scholarly and Academic Information Division
    - ●Library Liaison Cooperation Office
  - General Affairs Department
    - ●Research Promotion Division ●Budget and Accounts Division
  - Information Technology Center
  - Organization for Promoting Cooperation with Society and Industry



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