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NII News

National Institute of Informatics

NO.7
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Foreword

I am delighted to take this opportunity to wish everyone a new fiscal year and to express my appreciation for your exceptional work throughout the past year.

Information Technology (IT) which has been making a remarkable progress recently, has been recognized one of important social infrastructures to revitalize social activities and connect people. For example, a mobile phone with various functions to meet the users' needs has spread out and is accelerating the ubiquitous of IT. While penetrating all over the society, IT is changing our daily lives, reforming industry and commerce, modifying education and culture and creating the new network of people. It means IT is changing our society itself with requesting the network security and new networking theory. Nikkeishinbun (Japan Business Newspaper) of New Year issue declared that IT revolution has entered to the second stage called "Den'en no Jidai (era of e-connection)". In this context, raison d'etre of NII becomes more and more important.

The National Institute of Informatics (NII) is now one of the inter-university research institutes under Ministry of Education, Culture, Sports, Science and Technology (MEXT). From this April, NII became a part of Research Organization of Information and Systems which is a one of inter-university research institute corporations together with other three research institutes. In addition to the present mission of NII which is to implement research on informatics covering from natural science to social science and the humanities as well as to develop the circulation of scholarly information, NII is expected to cooperate with other three research institutes. From the viewpoint of intellectual property, one headquarters covering all four inter-university research institute corporations will be set up. Invention of a researcher in a research institute by using government grant will belong to the institute of the researchers. NII is expected to make every effort to pay attention to the demand of universities and society as well as to initiate the reform.

NII followed the idea of Dr. Hiroshi Inose, Ex-Director General of NII, that is both the research and the development and operational activities for the advanced circulation of scholarly information will be a driving force of NII like wheels of a car.

It is indispensable to deepen and expand the indwelling idea in a researcher in pursuing academic research. On the other hand, collaborative research projects in a various fields are promoted, which take the lead in the age.

The first NII graduate course of Sokendai (the Graduate University of Advanced Studies) will be completed this academic year. The mission of this graduate course is to provide graduate students with high potentiality and ability to think. I hope NII can produce excellent people with intelligence and humanity.

To promote the circulation of scholarly information, social contribution such as international cooperation, network service and training activity is also an important mission of NII.

I expect that all of us will renovate ourselves and make further efforts to survive the unprecedented situation of which NII being a corporation body.

Finally, I sincerely wish this year will be happy and prosperous for all of you.

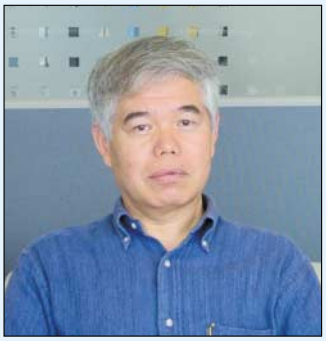
April 2004

Director General,
National Institute of Informatics

Yasuharu Suematsu

SUPER SINET No.4

Bioinformatics and Super SINET



Professor, Center for Information Biology and DNA Data Bank of Japan, National Institute of Genetics

Yoshio Tateno

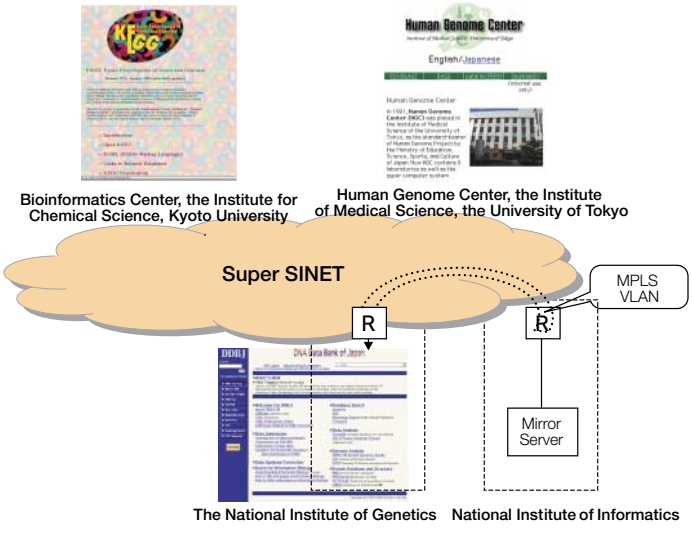
Yoshio Tateno received his PhD from the University of Texas Graduate School of Biomedical Sciences in 1978. He received a Doctor of Sciences from Tokyo Metropolitan University in 1987. After working for RIKEN, he joined the National Institute of Genetics in 1988 as assistant professor, was promoted to associate professor in 1990, and has held a full professorship since 1994. His research concerns molecular evolution and bioinformatics. He holds a concurrent position at the DNA Data Bank of Japan, an international research project between Japan, USA and Europe.

Genomes for many species have been completely sequenced, including the human genome. Bioinformatics has made significant contributions to the analysis of genome sequences and the construction of genome databases. Bioinformatics is a new field of research in biology. Its establishment and development owe much to the following two aspects. One, databases of DNA and protein sequences have become available internationally for public access. Two, various algorithms and software applications for estimating the homology between DNA sequences or between protein sequences have been devised and refined, and are available for public use. These two developments have made it possible to find or estimate the function of an unknown gene or DNA sequence that one has sequenced. In experimental sciences like biology, hypotheses and speculations are verified by experiments. However, the development of bioinformatics has made experimental verification unnecessary at times for certain hypotheses and speculations. For example, if the newly discovered gene sequence is proved to have a homology of 90 percent or more to a gene sequence with a known function, it is highly probable that one can resolve the function of the new gene without experiment. In fact, the functions of many human genomes are clarified or estimated through such bioinformatic methods.

Bioinformatics contributes to many fields in biology and has numerous applications, including pathology, search and identification of pathogenic microorganisms, therapy development, drug development, livestock breeding, agribusiness, and environmental conservation. In Europe and in the U.S., datagrid initiatives that adapt computer networks to bioinformatics, particularly to databases, have been realized and are already operating. Our gene data analysis group hopes to realize such a grid in Japan using Super SINET to contribute to the development of bioinformatics. In Japan and the other Asian countries, the number of researchers in bioinformatics-related fields is several hundreds of thousands. We hope to work with researchers throughout Asia to establish a datagrid. Target data includes DNA sequences, protein sequences, gene expression, higher order structure of proteins, and metabolic pathways.

As part of Super SINET, a high-speed network already links the Institute of Medical Science of the University of Tokyo, the Institute for Chemical Research of Kyoto University, and the National Institute of Genetics. We will take greater advantage of this network to push ahead with the development of bioinformatics in Japan in fields ranging from genomes and proteins to metabolic pathways.

The three centers and the NII operating the ultra-fast network database



SUPER SINET No.5

Grid research based on Super SINET

Director and Professor of the Computing and Commincations Center of Kyushu University

Fumihiro Matsuo

Born in 1941, Fumihiro Matsuo completed the master's program at the Graduate School of Engineering at Kyushu University. After serving as research assistant at the Faculty of Engineering, Kyushu University, he served as lecturer and later as associate professor at the Computer Center of Kyushu University. In 1988, he was appointed professor at the Faculty of Engineering. He has been professor at the Graduate School of Information Science and Electrical Engineering since 1996, and has concurrently been Director of the Computer Center of Kyushu University, which was reorganized as the Computing and Communications Center of Kyushu University in 2000.

Using the analogy of "power grids" (for the benefit of a large number of users) vs. power generators (which benefit only a handful of users), leading U.S. "datagrid" (grids consisting of interconnected computers) proponents say that "computational grids" may be of equally high importance, since they would enable not only distributed computation, but also distributed databases, to be realized.

Grids based on Super SINET are now being constructed, and researchers have begun using them. Here, I will give an overview of the current state of grid studies in relation to Super SINET.

The most advanced in terms of use and application of Super SINET is the grid based on the ITBL middleware, developed mainly by researchers from the Japan Atomic Energy Research Institute (JAERI). This grid connects six institutes related to the old Science and Technology Agency, including the JAERI and RIKEN. Although operations began on schedule, no supplemental development is planned for ITBL, and its future direction remains unclear.

The national synergistic computer centers at the seven national universities are all but certain to build grids based on Super SINET. In the fiscal year preceding the previous fiscal year, Globus middleware was ported to supercomputers at the seven centers, with funding from NII. Last year, funding was provided to prepare equipment for research on the grid. The conference organizations for grid research among the seven centers have been integrated into a single research committee after certain twists and turns, in which grid research, development, and applications are discussed.

Connection experiments for Globus ported to the supercomputers were conducted using Super SINET between the centers of Tohoku University and Osaka University and between the centers of Nagoya University and Kyoto University. Researchers are now preparing an environment for distributed computing among the centers of Hokkaido University, the University of Tokyo, and Kyushu University.

Starting this fiscal year, the Japanese National Research Grid Initiative Project (NAREGI), organized by NII, will host the researcher on the national grid for research. At the end of this fiscal year, computer systems at NAREGI and Institute for Molecular Science of the Okazaki National Research Institutes (IMS) will form a grid using Super SINET. This grid is expected to expand into computer systems at the participating research organizations. One research project of note is the so-called NanoGrid, in which the Institute for Materials Research of Tohoku University, Institute for Solid State Physics of the University of Tokyo, the IMS, and the Computing and Communications Center of Kyushu University are linked to the Super SINET VPN. The middleware used in this project is STA, developed by JAERI. Although STA, ITBL's predecessor, is designed for an intranetwork, the Computing and Communications Center of Kyushu University has extended it for internetworking into an application known as Stak (STA augmented by Kyushu Univ.).

Linking the Japan Advanced Institute of Science and Technology (JAIST), Kyoto University, and Hiroshima University, VizGrid represents the start of an interconnection experiment using Super SINET for a collaborative study on virtual visualization and stereopsis of the human body and other objects. However, actual grid construction has encountered several obstacles.

A grid linking Kanazawa University, Korea Maritime University, and the Computing and Communications Center of Kyushu University is also being discussed.

The research and development described above will

result in full-scale application of these grids. As all agree, practical applications require high-speed networks. For research such as performance evaluations, high-speed networks are indispensable even at the research and development stage. Super SINET plays a significant role in grid studies in Japan.

In contrast to earlier research introduction reports, this report lacks figures and tables. Since showing all of the grid constructions discussed above would involve too many figures, I thought to avoid the problem of selecting among them by omitting figures and tables from this report.

Research introduction

Multipoint input device or electronic chessboard

"Is this …, Ah!"

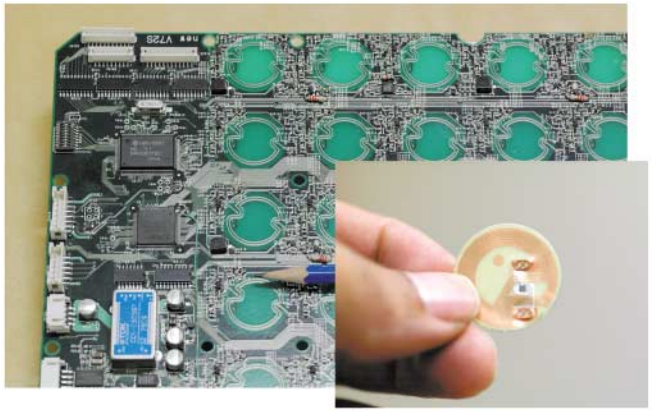
We've been working on this for almost five years, and we know that the real problem is to give a proper title to the research. Officially we call it "multipoint input device," but it seems tough for people understanding its purpose just by the name. However, when we show it to visitors, they would respond instantaneously, "Ah! I got it." That's quite natural — the system is like a large chessboard, and it is functionally true, too. We designed it for elementary school children (See the photograph below).

Multipoint input device and computer screen exhibited on Kasumigaseki child day (20.21 days August) in 2003 fiscal year.

"Hashizume-san, can you design a chessboard?"

One day of five years ago, Prof. Sugimoto who was my colleague and currently belongs to the University of Tokyo spoke up to me, "Hashizume-sensei, could you design a large chessboard-like device? That is for children. They put various kinds of pieces on it; it should sense the positions and feed the information to the host computer. We need it to assist elementary school classes." He explained more like the followings.

At that time he was working on education-assistance system for elementary schools, with the co-researcher Prof. Kusunoki of Tama Art University. They had the idea of a computer assistance system of social studies classes to let children make their towns freely, with small pieces of houses, parks, offices and factories. Then the host computer draws the scenery of the town as well as evaluating the population, environmental index and industry index of the town. Observing these information as the feedback they would try improvements on the plan, and eventually they would understand the sense of city planning, or what a "good town is." I admitted to participate them designing such a device, although I was an amateur on the research field. Since them we have been working in a joint research team.



Antenna grid of RFID tag (lower right) and device substrate

RFID technology

Does there exist any position input device around us? Yes, it does — for instance, we have digitizers or pen tablets. With a cursor, or an input pen we give a point on the device, then it reads the position and tells the X-Y coordinates up to within 1/1000 mm precision. They, however, operate just for a single point of an object, or in other words, we cannot make a chessboard with those devices

as we need simultaneous read-outs piece-position information and piece-kind information. The actual purpose of the device was for the assistance of elementary school classeses, but the condition was almost equivalent to the chess game — therefore we had to develop this.

Development was kind a trial and error. First idea was to use electromagnetic field. The user gives positions by putting a resonator (coil-and-capacitor circuit) on the top where was covered with electromagnetic field. The device should sense the positions of pieces by locational scanning of the field and the kind of the pieces by frequency scanning. We made the experiments, but it could not make it successful operation (yes, we did not have enough patience).

The next idea was to use RFIDs.

An RFID (radio frequency identification tag) is a wireless memory cell. User can read from and write information into the memory cell without connecting wire to it physically. So array of small antenna coils being deployed on the top surface of the device, and the RFIDs being burried in the manipulation pieces, they communicate each other. The antenna detects the position of the piece, also detects the kind of a piece by reading out the tag memory.

The RFIDs became popular these days as JR (Japan Rail Service) introduced SUICA, or the electronic pass card system which uses the same technology. Passengers just put SUICA cards on the gate reader, sometimes just a wallet holding the card, they go through the gates. Another application is the electronic bar code system. The RFID chips can be made tiny and thin, so they can be put on the merchandise easily. Then we can trace the merchandise from the production plant down to the final consumer site, using the contained information in the cell memory. This is so called Ubiquitous Computing, but our multipoint input device is totally different from those applications.

NII participates in Children's Day for Visiting Kasumigaseki
(August 20 and 21, Ministry of Education, Culture, Sports, Science and Technology annex)

Children's Day for visiting Kasumigaseki are held jointly during summer vacations by various ministries and agencies, with the goal of providing children with the opportunity to deepen their understanding of the policies of these organizations. NII participated for the first time this year, making two presentations: "The Digital Silk Road," a joint project of Prof. Ono and UNESCO; "Computers that Can Be Touched and Enjoyed," by Prof. Hashizume. Consisting of demos, a 4-meter wide picture of a stone cave at Bamiyan, simple posters, and quizzes, the former presentation introduced efforts to revive the endangered cultural heritage of Bamiyan, which UNESCO listed as a World Heritage Site in 2003, using digital technology. The latter presentation described two models: One is based on the theme "Thinking about environmental problems using wireless tags and sensor boards" (refer to the research introduction described above, "Multipoint input device or electronic chessboard", while the other is based on the theme: "Operating computers using sounds." Featuring innovative designs thanks to the collaboration of Tama Art University, these models were popular among guests, who were also permitted to handle them.

Many children as well as parents visited our presentations, giving us the opportunity to demonstrate the pleasure of learning over two fruitful days.

(Dissemination Activities Division)

Explanation scenery of "Computers that Can be Touched and Enjoyed" by Prof. Hashizume

Explanation scenery of "Digital Silkroad"

Research of the unique input device

When we started the research five years ago the RFIDs were just born and the makers started to find their applications. We invited OMRON corporation, which was a manufacturer of the tags, and Tokai Soft which was a set builder to our research team. They made a prototype of the input device just within two months, then we could bring it to schools for the experiment. Ever since we refined the design; now is its fourth generation. The device became very stable, can be operated for several days seamlessly tolerating the children's harsh handlings.

Our goal is to make the device cheaper so that teachers can purchase it for their classes. We made some technological developments to make it cheap, but at the moment the system is still expensive for item. We also introduced the system in conferences and research meetings. This effort made a small success instead — the system became famous among human-computer interaction researchers and recently we are invited to an international conference to give a keynote speech. This was what I never expected when I answered to Sugimoto-san five years ago, "OK, I will think of a chessboard."

Research group of multi-talents.

Another fun aspect of pursuing the research is to run a multi-talent research team which consists of information science researchers, engineering students and art college students. The members make totally different decisions on some topic, say, of making a display program. Engineering school students try to make the program simple in logic, considering easiness in future improvements, whereas art students give the most importance on artistic impressions. Often they end up with a quarrel, but sometimes the conflict makes an unpredicted solutions. That's what I like about the research group, and why I should work with them.

*(**Hiromichi Hashizume,** Professor, Information Medium Department)*

Quantum Information Science

Research introduction

Information sciences — communication theory, statistics, algorithm theory, complexity theory, control theory etc— share the same cognitive attitude with classical mechanics. This cognitive framework is apparently natural, but is in sharp contradiction with quantum mechanics, which describes fundamental laws of the universe. Hence, information sciences based on quantum mechanics, would be very much different from "classical" information sciences. Recently, this field attracts more and more interests since classically impossible/hard tasks are possible/easy if quantum information processing is used.

For example, quantum computer solves factoring of integers, discrete log, and Pell's equation etc (sub) exponentially faster than conventional computers. This fact is significant, for conventional public-key cryptosystems are rely on hardness of those problems. Here, speed is measured by the number of the steps in computation, and the speed up is not due to the speed up of gate operations, but due to fundamental change in principles of computation.

Another remarkable algorithm is Grover's search. This algorithm is used to accelerate classical algorithm, reducing computation time to square root of original algorithm. Hence, application to exponential time algorithms means reduction of exponent by half. Also, variety of application is a merit of this algorithm.

Of course, a classical algorithm that achieves the same speed as quantum computation might be found out in the future. However, many query complexity results and random oracle separations suggest such a possibility is quite small.

Besides quantum computation, many practically useful quantum information processing are proposed. Among them, quantum cryptosystem is one of most important. This cryptography system enables us to undertake 100% information theoretically secure secret communication. Security is based only on laws of quantum mechanics. Now, there are some more classically impossible tasks are shown to be possible in quantum information.

In the end, we touch with physical implementation. By now, quantum cryptography over 150 km has succeeded, only with rather common technologies. This big success is due to the fact that quantum cryptography does not use interactions between particles. Except for this very fortunate exception, most of experiments are aimed at the test of the theory, and are very far away from engineering. However, considering that this field is just started up, these achievements are remarkable enough, and much more results are expected in near future.

*(**Keiji Matsumoto,** Associate professor, Quantom Computing, Foundation of Informatics Research)*

Research on developing efficient algorithms for knowledge discovering from semi-structured databases.

Joint research No.1

The recent rapid progress of information technology increases the size of datas, such as web pages, genome sequences, customer data. They are sometimes semi structured.

For finding some valuable knowledges and rules form the data by human hands, their sizes are too large.

Thus, we need some computational methods for mining some structured/unstructured sets, which can be used to obtain such knowledges and rules. The goal of this research project is to develop efficient algorithms for this task. In this year, we have developed the following three algorithms. We show them as follows.

● Efficient Algorithm for Mining Maximal Sets

Consider a set family (set of n-dimension 01-vectores) such that any subset of an element of the set family is included in it. Such a set family is called monotone set or independence system. The set family is represented in an implicit way, for example oracle calls. The problem is to find all the maximal elements of the set family given an implicitly way. We improved an existing algorithm named Dualize and Advance, and developed an efficient algorithm for solving this problem. We theoretically reduced the time complexity and space complexity by the improvement.

● Efficient Algorithms for Frequent Set Mining Problems

Consider a transaction database composed of many itemsets, sequences or documents. A frequent set is a set of items, words, or letters such that the set is included in many transactions. Frequent sets are often used for analyzing datasets, thus the existing computer systems of data mining often include algorithms for enumerating frequent sets. We construct efficient algorithms for this task.

The algorithms are obtained by improving an algorithm for enumerating maximal cliques. Maximal bipartite cliques correspond to equivalence classes of frequent sets, thus we can handle many fluent sets quickly. Furthermore, we add several practical improvements based on the sparsity of the database, which is a feature of real data. The implementation of our algorithm works very well for real data, and got high marks in two area of a competition of data mining held at America.

● An Efficient Frequent Pattern Miner for Semi-Structured Data

It is well known that semi-structured data such as XML and Web pages can be modeled by the class of labeled ordered trees or labeled graphs. We studied on discovering interesting patterns from large collections of trees and graphs. As results, we developed an efficient algorithm for finding all frequent unordered trees appearing in a collection of semi-structured data with frequency no less than a given thresholds. We construct an efficient ways for generating frequent patterns of labeled trees, which takes constant time for each pattern, and for checking the frequency of patterns. We implemented our algorithm, and evaluate the efficiency of our algorithm

Joint research member

NII : Ken Satoh, Takeaki Uno, Takeshi Murata, Ryutaro Ichinose
Osaka University : Kazuhisa Makino
Gumma University : Shinichi Nakano
Kyushu University : Hironori Arimura, Tatsuya Asai

*(**Ken Satoh,** Professor, Symblic Reasoning,*
***Takeaki Uno,** Associate Professor, Foundation of Algorithms, Foundation of Informatics Research, NII*
***Hironori Arimura,** Associate Professor, Kyushu University, Graduate School of Information Science and Electrical Engineering)*

Report on Digital Silk Roads for Nara Symposium

NII held the Nara Symposium for the Digital Silk Roads from December 10th to 12th in the Nara Prefectural New Public Hall, in cooperation with the United Nations Educational, Scientific, Cultural Organization (UNESCO), the Japanese National Commission for UNESCO, and the Asia-Pacific Cultural Centre for UNESCO (ACCU).

The Digital Silk Roads (DSR) project effectively got under way at the Tokyo Symposium held in December 2001. The first international symposium for the DSR adopted the Tokyo Declaration, which proclaimed that Silk Road heritage should be restored and passed on to the future generations as a common asset of mankind by drawing on the latest development of information technology. Based on this statement, NII, UNESCO, and other organizations in various countries have since been carrying out a range of activities for the project.

The Nara Symposium, which took place two years later, aimed to further promote the DSR project by presenting and discussing such activities. The city of Nara was chosen as the venue since it was the Eastern-most terminal of the ancient Silk Roads and thus Japan's gateway to foreign cultures.

On the first day, which was opened to the general public, NII's Director General, Prof. Yasuharu Suematsu,

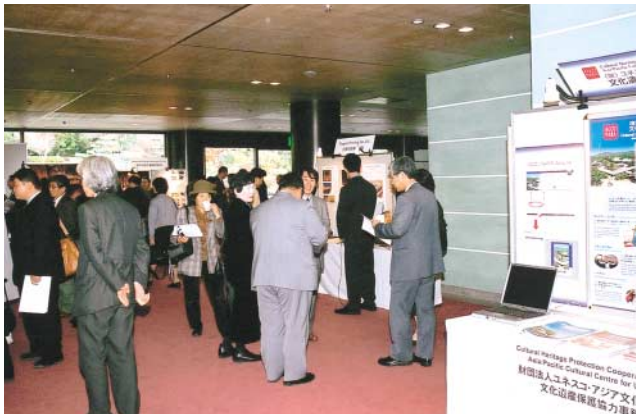


Photo 2 : The exhibition hall

Photo 3 : The special session of opinion exchanges

Photo 1: Keynote lecture by Mr. Takayasu Higuchi

deputy representative of the Japanese National Commission for UNESCO, Mr. Toru Ishida, ACCU Director-General, Mr. Kunio Sato, and Director of UNESCO-Kabul and UNESCO-Baghdad, Mr. Martin Hadlow, addressed the conference.

They were followed by the keynote speech by Prof. Takayasu Higuchi, professor emeritus of Kyoto University and Director of Research Center for Silk Roadology, who lectured on the theme of "Culture Heritage in Afghanistan".

The subsequent public lectures included "The Ruins and the Culture in Ancient Loulan Kingdom" by Prof. Kazutoshi Nagasawa, professor emeritus of Waseda University, "Intercultural Tourism along the Silk Roads" by Mr. Doudou Diene, UN special rapporteur, "Challenges and Potentials for Sharing between the Network of Excellence for Research and Education on Digital Silk Roads and e-Culture Net" by Dr. Kim H. Veltman, Scientific Director of Maastricht McLuhan Institute, "Nara, the Final Destination of Silk Roads --- the Road of GIGAKU" by Prof. Minoru Senda, professor at International Research Center for Japanese Studies, "The Tangible Heritage of Cultural Asia", by Mr. Barry Lane, head of UNESCO-Tashkent, and "Overview of the Digital Silk Roads Project — Summary and Future Perspectives", by Prof. Kinji Ono, Executive Director for Research at NII.

Simultaneously with the open lecture session, an exhibition to introduce Silk Roads culture and digital technology was held in the first-floor hallway. Digital archives of some Silk Roads cultural assets drew scores of visitors. The first day was wrapped up with an evening reception

On the second day, the symposium moved into expert sessions. The current status of the Digital Silk Roads and how to integrate culture and technology were among the

topics discussed on this day. A poster session provided opportunities for presenters and participants to exchanges opinions and share their experiences. (PHOTO 3) A special session to explore UNESCO's future strategy for the Silk Roads heritage was also convened. (PHOTO 4)

The morning of the third day saw some more expert sessions, which were followed by an awards ceremony and a closing ceremony. (PHOTO 5) In the afternoon, many of the participants joined a study tour to Todaiji Temple and the ruins of the Court of Heijo, both of which have been designated as UNESCO World Heritage sites. (PHOTO 6)

The open session on the first day attracted about 250 participants, while the expert sessions on the following two days drew around 140 attendees, of which some 50 were from overseas. Foreign participants came from such countries as Azerbaijan, Belarus, China, Egypt, France, Georgia, India, Iran, Italy, Kyrgyzstan, Mongol, the Netherlands, Pakistan, Sri Lanka, Thailand, Turkmenistan, the UK, the US, and Uzbekistan along with officials from the United Nations and UNESCO.

The Nara Symposium demonstrated that there had been a remarkable progress in research and development on the Digital Silk Roads during the two-year period from the first conference in Tokyo. Specific schemes and their outstanding results were presented through lectures, presentations, posters, demonstrations, and exhibits, which greatly intrigued the participants.

It should be noted that many researchers from Central and Western Asia took part in and actively contributed to the symposium. They helped other participants to obtain knowledge and information on the current situation of the countries that actually own the Silk Roads heritage.

It is also worth mentioning that new topics such as GIS and the sea route were discussed in the symposium. Furthermore, the fact that an evening session on the second day featuring young scholars' work attracted many participants seems to be an encouraging sign for future research on the DSR.

At the end of the symposium, prizes were awarded for outstanding presentations to encourage further progress. Scholars from France, Thailand, and Japan as well as a doctorate student at NII from Iran received the awards.

The three-day conference was concluded by Mr. Martin Hadlow's closing remarks. He said that the symposium

Photo 4: The strategy session of UNESCO

Photo 5 : Awarding ceremony

Photo 6 : Study tour

turned out to be far beyond his expectations, enabling him to clearly envision what the Digital Silk Roads would be like. He praised the efforts of researchers and administrative staff at NII, saying they were the ones who led the symposium to a great success.

I would like to end this report by expressing deep gratitude to a number of organizations, including the Nara Prefectural Government and the municipal government of Nara City, for extending generous support for the symposium.

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

*(**Kinji ONO,** Symposium Chair / Executive Director for Research, NII)*

The NAREGI Project Booth at the High Performance Computing and Networking Conference (SC2003)

From November 15th to 21st, 2003, SC2003, the most authoritative conference in the field of high performance computing and networking, was held in Phoenix, Arizona, highlighting the most innovative developments, including Grid Computing. (URL http://www.sc-conference.org)

Scientists, engineers, researchers, educators, system administrators and managers all got together to participate in the technical sessions and the exhibition, with the total attendance of about 7600.

The Japanese National Research Grid Initiative Project (NAREGI), which started in April 2003, exhibited a booth in the Research Exhibit area. (URL http://www.naregi.org) Panels were displayed, introducing the objectives of the project and the overview of the R&D activities in the three key areas such as grid middleware, grid networking and nano-science & technology applications. Booth presentations were also made by Dr. Miura, the project leader, and other key members of the project, together with some demonstrations.

Although this is the first time that NAREGI Project participate in this event, the booth was visited by over 400 people during the three-day exhibition, including prominent researchers in grid computing. In particular, we had very fruitful discussion regarding collaborations with some European Grid Projects.

*(**Ken ichi Miura,** NAREGI Project Leader, Center for GRID Research and Development /Professor, High-end Computing, Infrastructure Systems Research)*

Explanation to visitors in NAREGI booth

Phoenix Civic Plaza (SC2003 Conference and Exhibit Hall)

A Lecture by Professor Václav Hlaváč of Czech Technical University

Professor Václav Hlaváč had visited NII from the 1st to the 9th in November, 2003, as a part of a bilateral project between Japan and Czech Republic. Professor Hlaváč is the deputy head of the department of Cybernetics, the faculty of electrical engineering of the Czech Technical University. He is also the head of the center for Machine Perception there which is a research unit focusing on mathematical aspects in the research fields of computer vision and pattern recognition. He is now running two major coming international conferences. One is the 17th international conference on pattern recognition (ICPR2004) hosted by the IAPR (International Association for Pattern Recognition) and the other is the 8th European conference on computer vision (ECCV2004).

On November 11th, Professor Hlaváč gave us a talk at NII on several new results obtained in his group. They were related to (1) wide baseline stereo based on affine invariant descriptors, (2) 360x360 degrees panoramas and (3) an algorithm for reduction of the training set in

the kernel methods. He also mentioned the currently running big projects in cognitive vision supported by the European Union. Intensive discussions were exchanged throughout his talk.

*(**Akihiro Sugimoto,** Associate Professor, Human Machine Symbiosis, Intelligent Systems Research)*

NII Informatics Open Forum
2nd < July 14, 2003 >

PRIM and Prosper : Research into Personal Relationship Information Management

Principal Research Scientist in the Institute for Infocomm Research in Singapore

Leong Mun Kew

Dr. Leong Mun Kew is a Principal Research Scientist in the Institute for Infocomm Research in Singapore. He heads a group of researchers in exploring, understanding, and using semantics in text and multimedia. His personal research is in information retrieval, mobile and social information management, digital libraries and distributed multilingual search systems. Mun Kew has a doctorate from Stanford University. He publishes and speaks in many forums, is a member of the IP&M editorial board, is on the steering committee and advisory board of international symposia, and is active in the organisation of conferences and workshops. He was also formerly VP & CTO of BIGontheNet Pte Ltd, a startup IT company, where he remains as Technical Advisor.

Your handphone knows more about you than your mother does! You exist as part of a group, whether of friends, family and/or business associates. This talk covers recent research on modelling and leveraging social relationships in personal and business scenarios, and how to structure information managment (whether on the handphone device or on a different device/computer) to enable it. There are three parts to this talk. In the first part, we suggest several scenarios on how personal relationships can be leveraged, define a model, and propose several hypotheses about the fundamental elements in personal relationship management. In the second part, we describe an ethnographic study conducted on personal relationship management and leveraging, and identify fundamental features and scenarios which can be turned into innovative applications on mobile devices. The third part of the talk suggests that user interaction with mobile devices resembles a conversation, and as such, can be mapped onto Grice's maxims of conversational implicature. We propose analogues of the maxims in a mobile device scenario, and suggest that the maxims may help in testing the design of mobile systems.

Shifting ICT to ICA — Towards information and communication activity navigation —

Office for Cooperative Research Programs
Research Center for Testbeds and Prototyping, Professor

Hideaki Takeda

Hideaki Takeda completed his Doctoral Course, Graduate School of Engineering, The University of Tokyo in 1991 and received Ph.D in science. After serving at Nara Institute of Science and Technology, he has been Professor at NII since 2003.
His research fields include knowledge sharing system such as ontologies and community support systems, robotics such as intelligent artifacts, and design theory.

We should shift our focus from information and communication technologies (ICT) to information and communication activities (ICA). We should investigate what are human activities on information and communication

and how we can assist people in these activities.

Human activities on information such as collecting information and communication such as contacting to people are only a part of human activities but they become to play an important role more and more in modern life.

I propose two-layered model for human daily activities.

The first layer has three elements that concern information handling, i.e., Collect (information), Create (information)and Donate (information).

It shows user-centered view of life cycle of information. Information is collected, then new information is created based on the collected information, and finally created information is donated to the society for future creation. It should be noted that new information is seldom created from scratch but created based on existing information.

The second layer has also three elements that concerns communication handling, i.e.,

Relate (people), Collaborate (with people) and Present (people).

It is communication-centered view of the above process. People establish relationship with other people, then collaborate with them to create new information, and finally present themselves as donor of new information. Having both information and communication layers is not redundant. What we refer as "information" in the context of computer technologies is stored data in computers, while human is the source of "information" in the broader sense, i.e., human can offer information dynamically. We should consider communication in order to include the function "human as information source". This parallel view of information and communication activities have thus six categories as activities. Ideally all categories should be supported by computers. Some categories like Collect is well investigated, but others are not. In particular, the three categories in the communication layer should be investigated more.

NII MESSAGE FROM NII RESEARCHER

National Institute of Informatics
Scientific Researcher

Ai Kawazoe

A supporting staff for scientific research at Foundations of Informatics Research Division. M.A. of literature (1999, Kyushu University).

I have been working at NII as a supporting staff for scientific research since April 2003.

My major is theoretical linguistics. In the past few years, I had conducted research at Kyushu University and Kyoto University, mainly on 1) syntactic and semantic properties of floating quantifiers 2) scope interactions between quantifiers and 3) coordination phenomena in English and Japanese.

At NII, I am working on constructing a coreference resolution system, as a part of the PIA project led by Prof. Nigel Collier. Coreference is a relation among linguistic expressions which refer to the same thing (for example, "Gates" and "his" in "Gates grew up in Seattle with his two sisters"). Annotating coreference relations in texts in an appropriate way is important for developing Information Extraction technology. So far our group has developed an annotation scheme for coreference and a support tool for annotators. We are now planning to make annotated corpus from biomedical articles, and construct an automatic annotation system by machine learning from the corpus.

Although I am still a newcomer to this field, I feel I am very lucky to have a chance to work at NII since I can learn various aspects of informatics here. Every day I enjoy learning new things, discussing with other researchers, and searching for the point where informatics and theoretical linguistics make contributions to each other.

MESSAGE FROM FOREIGN RESEARCHER

JSPS postdoctoral Fellow, Distributed Processing,
Software Research Division

David Thevenin

I came in NII for two years under the JSPS fellowship program as post doctorate. I have studied computer science at Joseph Fourier University. I obtained my Ph.D. degree the 21 st December 2001 in the Human-Computer Interaction group supervised by professor Joëlle Coutaz. My thesis title is "Adaptation in Human Computer Interaction: the case of Plasticity".

My main research field is designing and development of multi-target User Interfaces (UIs). A target is defined by a triple "platform, environment, user", where the platform denotes the software and devices that underlie interaction, and the environment corresponds to the physical space where the interaction takes place. Developing a multi-target UI involves a panoply of software engineering problems including resource sharing, versioning, and the combinatory explosion due to the variety of potential targets. Then, I propose a general framework that structures the development process of multi-target UI's. This framework, which adopts a model-based approach, is intended to serve as a reference instrument to help designers and developers to structure the development process of UI. Modeling techniques support sound design methods and pave the way to the development of appropriate tools. Our framework has been used for the development of Plastic UI. The Plasticity of User Interface is a new property of interactive systems that denotes a particular type of user interface adaptation. Plasticity is the capacity of a user interface to withstand variations of both the system physical characteristics and the environment while preserving usability. Typically, a "plastic" electronic agenda would run both on a workstation and on a handheld computer without requiring a complete system redesign and re-implementation.

This framework is in part implemented in a tool named ARTStudio (for Adaptation through Reification and Translation, Studio). It is a semi-automatic generator that provides the designer with the ability to tune the descriptions generated by the ARTStudio at every step of the design process. In its current version, ARTStudio addresses adaptation of screen size and widget-toolkit (Java-Swing/AWT and Waba) and generates Graphical UI for workstation that supports Java and PalmPilot.

At NII I am working for generating WEB UI for the Papillon project. This project aims at creating a multilingual lexical database covering among others English, French, Japanese, Lao and Thaï. I develop methods and tools for generating dictionary access user interfaces. These UIs have to be adapted to the devices (PDA, mobile phone, workstation) and to the users. We are able to generate HTML and tiny-XTML (for mobile) UIs. I am also working on extensions of numerical constraint solvers for using these in interactive Graphic User Interface adaptation systems. We define meta-solver managing constraints such as different size of widget, different presentation layout, …

Now I have one year more at NII for finishing my current research and I hope to find collaborations with Japanese researchers for applying my research in new field

MESSAGE FROM FOREIGN RESEARCHER

JSPS Summer Fellowship 2003

Luke Carrivick

Obtained his master degree of applied mathematics from Cambridge University in 1999. He is majoring in the study of AI at Bristol University, England
From July 2003, he stayed at NII as JSPS fellow.

For two months over the summer of 2003 I was lucky enough to be invited as on a JSPS Fellowship for young foreign researchers. The idea of the scheme is to provide a short experience of working within a Japanese institution in order to strengthen and encourage collaborative links between the visiting country and Japan. After an induction week, which included an introduction to Japanese culture and some very useful language lessons, all the participating researchers left for their host institutions throughout Japan. When I arrived at the NII, the first thing that struck me was the sheer size of the building and its unforgettable location. After coming from a university in England, where the buildings are much smaller, older and spread around a city which is a fraction the size of Tokyo, the contrast could not have been greater. Soon after arriving I gave a short presentation, as well as providing a platform for some very useful and original discussion about my work this also gave me an opportunity to meet fellow researchers. I found everyone extremely welcoming and interested in my work. My research is concerned with techniques for the automatic diagnosis of lung disease. Data is provided in the form of CT (Computed tomography) images of the chest and also other, textual information, such as a patient history. Much of this data is in a free text form, so before any model can be learnt a structured version must be generated. Prof Colliers' group is interested in Natural Language Processing, and in particular NLP of biological texts. As well as being providing me with some expert advice about how to best to proceed with the structuring of the text, they fresh ideas on my research as a whole. Japan is a wonderful and fascinating country and I have greatly enjoyed my short stay in Tokyo. Given another opportunity I would happily return in the future.

JSPS Postdoctral Fellow, Symbolic Reasoning, Foundations of Informatics Research

Tony Mullen

Received bachelors degree in English Literature from the University of Washington and received his masters degree in Linguistics from Trinity College Dublin
Obtained PhD in the field of statistical Natural Language Processing at the University of Groningen, Netherlands
From April 2003, he is staying at NII as JSPS Postdoctoral Fellow.

I am a postdoctoral researcher from the United States. I grew up in Seattle, Washington, where I studied English Literature at the University of Washington. Subsequently, I lived for several years in various countries in Europe, where I did a Masters Degree in Linguistics at Trinity College, Dublin, Ireland, and a PhD at the University of Groningen in the field of natural language processing (NLP). I also spent time working as a visiting researcher at the University of Edinburgh in the UK.

My PhD research work was concerned with employing statistical models to the task of syntactic parsing of English and Dutch. In particular, I employed a method known as the {¥it maximum entropy technique} (MaxEnt) to assign a probability distribution over a set of grammatically correct parses for a sentence, yielding a preference ranking representing the quality of the parses. MaxEnt is a means of creating a probability distribution over configurations of statistical features, and may be used to model

Ph.D. program informatics of the Graduate University for Advanced Studies accepted 8 new students

The Ph.D. program in informatics (Ph.D. course) of the Graduate University for Advanced studies accepted 8 new students (5 in the international course and 3 in the regular course) in October and NII provided course guidance on October 9, 2003.

In this guidance, the self-introduction of students and the orientation of our curriculum were given in English for 6 non-Japanese students of 8 new students, the introduction of NII information services followed.

On October 10, the Graduate University for Advanced Studies held its entrance ceremony in Hayama.

At present, 44 students, including 19 foreign students, are enrolled (11 foreign students are in the international course).

(Research Cooperation Division)

Entrance ceremony of the Graduate University for Advanced Studies in Hayama

Guidance on the Ph.D. program in informatics at NII

any kind of events, such as parses, which can be represented as configurations of features. Of particular interest is that the MaxEnt approach does not assume independence of these features, thus features which share information or otherwise depend on other features may still be accurately modeled. The training consists of iteratively assigning a parameter value to each feature based on the feature's occurrence in training data. The resulting parameter values may be used to evaluate new data represented by the same features.

In my work at NII, I will apply the MaxEnt technique to the NLP task known as named entity recognition (NER), an important first step in the process of automatic semantic markup of texts. The MaxEnt technique is well suited to this task, and indeed I am not the first to apply it to this task. Among others, Borthwick (1999) and Chieuet. al (2002) have used MaxEnt for NER tasks, with good results. There is much room to explore, however; the MaxEnt technique is particularly flexible in terms of the knowledge sources (that is to say, feature information) which can be brought to bear on the classification problem. Differently prepared training data can offer different opportunities to exploit knowledge sources, and in my work in NII, I intend to explore new ways of exploiting grammatical information available.

Other possible avenues for research include variations on the classical MaxEnt models, such as Maximum Entropy Markov Models (MEMMs) and conditional random fields (CRFs) which may yield still better performance.

I am very much looking forward to the remainder of my stay in Tokyo. It is an exciting opportunity to experience Japanese culture, to learn the Japanese language, and to enjoy the many pleasures that this country has to offer. I am very grateful to the Japanese Society for the Promotion of Sciences for the opportunity to come here and to NII for taking me on as a researcher.

References:
Borthwick,A. A Maximum Entropy Approach to Named Entity Recognition. Ph.D. Thesis. New York University. September, 1999.
Chieu, Hai Leong, & Ng, Hwee Tou (2002). Named Entity Recognition: A Maximum Entropy Approach Using Global Information. Proceedings of the 19th International Conference on Computational Linguistics (COLING 2002). (pp.190-196). Taipei, Taiwan.

Message from Graduate Students

Chikahito Nakajima

Ph.D. Student
The Department of Informatics,
School of Multidisciplinary Science,
The Graduate University for Advanced Studies

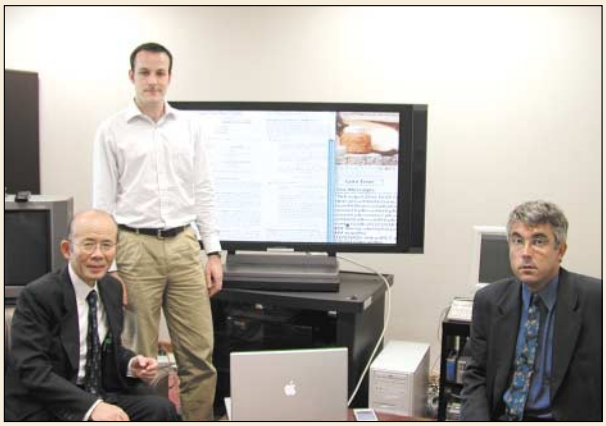
I've studied image processing for 15 years at a research institute. I've had an opportunity to visit Massachusetts Institute of Technology for one and half years in the research. I'm trying to develop image-processing systems that have functions like human vision.

I joined NII for my Ph.D. research, because I thought that I should integrate my ideas at this milestone in my life as a researcher and earn a doctorate. When I first asked for advice from Prof. Ueno, my advisor in the undergraduate and master's programs, he invited me to join NII. I couldn't apply in NII's first year for reasons related to work, so I enrolled in the next year.

At NII, I am devoting myself to study that will develop image-processing systems that have the functions and structures such as the visual cortex of human brain, under the stimulating guidance of teachers who play an active role in a wide range of fields.

Jerome Godard

Ph.D. Student (Second year)
The Department of Informatics,
School of Multidisciplinary Science,
The graduate University for Advanced Studies



I come from France where I got my master degree in Computer Science at ESAIP (Ecole Supérieure Angevine d'Informatique et Productique) with strong skills in mathematics and electronics. I had the opportunity, during my master course, to study at Liverpool University in 1999 and to work there as a Linux network administrator and then, in 2000, to attend lectures at Darmstadt University and to do an internship at IXOS in München. These rich experiences gave me the motivation to pursue my education in foreign countries. I first came to Japan to work on a multilingual lexical database (Papillon project) at NII for a 6-month internship. I decided to stay for several more years in Japan as a student at NII when Sokendai's Ph.D. course started. Since then, I have been working on database structure and mechanisms for heterogeneous multimedia data under the supervision of Prof. Ono and Ass. Prof. Andres. I am currently a second-year Ph.D. student; the research I have done shows interesting progress and has applications in the Digital Silk Roads project and collaboration with University of Michigan. As a conclusion, I would say that I am really enjoying my life in Tokyo, and especially since I succeeded on the main research topic of life: love.

Visits by Director of the German National Library of Science and Technology and Director of the Library of Goethe Institute Tokyo

On June 18, Mr. Uwe Rosemann, Director of the German National Library of Science and Technology, Mr. Jens Boyer, Director of the Library and the Information Center of Goethe Institute Tokyo, and Mr. Yoshitsugu, staff of the Information Center, visited NII. The German National Library of Science and Technology, which also serves as the Library of the University of Hannover, plays a major role as a clearinghouse of scientific and technological information in Germany.

The meeting was attended by Prof. Negishi, Director of the International and Research Cooperation Department, Mr. Konishi, Deputy Director of the Development and Operations Department, and Ms. Kuranishi, Director of the Publicity and Survey Division, from NII. At the meeting, NII's operations were outlined and explained, followed by a lively exchange of opinions primarily on developmental and operational issues.

Director Rosemann discussed SUBITO, a German document delivery system, and VASCODA, a new academic portal project. According to Director Rosemann, as a member of SPARC Europe, the German National Library of Science and Technology is currently seeking to refine a new international infrastructure for academic information distribution. This account was followed by a discussion of the possibility of future collaboration between the two organizations.

From right, Mr. Uwe Rosemann, Director of the German National Library of Science and Technology, Mr. Jens Boyer, Director of the Library and the Information Center of Goethe Institute Tokyo, and Mr. Yoshitsugu, staff of the Information Center.

The purpose of Director Rosemann's visit to Japan on this occasion was to attend "the 18th Germany-Japan Information and Documentation Panel," held June 16 and 17.

(Publicity and Servey Division)

Visit from the National Library of Korea

On June 20, a delegation of the National Library of Korea, including Mr. Shin Hyun-tai, Director of the Public Service Division, Ms. Lee Sun, Deputy Chief of the Library Automation Office, and Ms. Cha Gyeong-lye, Assistant Librarian of the Support and Cooperation Division, visited NII. They were invited by the National Diet Library of Japan, as part of its international collaborative activities.

The meeting was attended by Ms. Kuranishi, Director of the Publicity and Survey Division, Mr. Funatogawa, Assistant Director of the Publicity and Survey Division, Ms. Modeki, Assistant Director of the Contents Division , and Mr. Uzawa, Chief of the Contents Management Section. At the meeting, the operations of NII were outlined and explained, followed by a lively exchange of information, primarily on catalog information services.

NII signed a memorandum of mutual cooperation with the National Library of Korea on January 15, 2003. We plan to establish a system that enables both organizations to use the other's Machine Readable Cataloging (MARC) formats by the end of July.

(Publicity and Servey Division)

From right, Mr. Shin Hyun-tai, Director of the Public Service Division, interpreter, Ms. Lee sun, Deputy chief of the Library Automation Office, and Ms. Cha Gyeong-lye, Assistant Librarian.

Report on Papillon 2003 Seminar

The fourth edition of the annual Papillon project seminar took place from July 3rd to 5th at Sapporo University, Hokkaido, Japan. This project started as a French-Japanese cooperation between NII and GETA-CLIPS in Grenoble, France. The goals of this project are the followings: on one hand, to create a cooperative, free, permanent, web-oriented and personalizable environment for the development and the consultation of a multilingual lexical database build a multilingual lexical database on the web by voluntary contributors and on the other hand, to create a rich framework for the research in this field of computer linguistics. The initial motivation is the lack of dictionaries, both for humans and machines, between French and many Asian languages. The languages now tackled are Chinese, English, French, German, Japanese, Lao, Malay, Thai and Vietnamese. This year, Chinese collaborators from Singapore and China as well as a Korean researcher joined the project. We consequently added Chinese and Korean in our multilingual database.

The idea is to apply the LINUX construction paradigm to the building of a multilingual lexical resource. The users contribute voluntarily around the world via a web interface by adding or correcting the lexical data. Everybody can contribute at their own level: a specialist in French grammar will add the parts-of-speech for the French entries, a bilingual French-Japanese translator will add bilingual translation links between French and Japanese entries, etc. The contributions are then reviewed by a group of specialists and integrated into the database. This method is very interesting in order to break the barrier of the construction costs for large coverage dictionaries and to develop easily lexical resources for bad coverage languages like Lao.

Yves Lepage from ATR Lab, Keihanna, chaired the seminar. There where around 30 participants from more 7 countries. On the Japanese side, there were researchers from NII, Tokyo Institute of Technology, Waseda University, ATR Laboratory & NTT (Keihanna), and the French Embassy. On the French side, there were researchers from GETA-CLIPS in Grenoble University, Montpellier University, CNRS and Paris 7 University. There were also researchers from Kasetsart University, Thailand, Monash University, Australia, Montreal University, Canada and Singapore.

A total of 19 papers were presented during the seminar with two invited talks. Most of the contributions showed a high level of scientific interest confirmed by many publications in international conferences, and this year, two Ph. D. students started their thesis on a subject directly related to Papillon project. Mathieu Mangeot and David Thevenin from NII demonstrated their work done on an online generic editor for dictionary entries that automatically adapts itself to the structure of the entry. Nevertheless, despite the high level of research, the participants stressed the fact that there is a lack of manpower for the management of the server.

For more information, please refer to the website:
http://www.papillon-dictionary.org

*(**Mathieu Mangeot,** Researcher, Information Management, Human and Social Information Research Division)*

Screenshot of the generic editor for dictionary entries

NII-REO NII Electronic Journal Repository

Our online service, the "NII Electronic Journal Repository (NII-REO)," established in FY 2003, integrates and delivers the contents of electronic journals to subscribing domestic universities and consortiums on a stable and continuous basis.

Repository: a warehouse or source of information

Features of NII-REO

Integration and delivery of electric journals

The contents (e.g., papers, bibliographic information) of electronic journals are uploaded by a given publishing company for integration and delivery to eligible subscribing universities or organizations.

Unified interface

Providing publisher uploaded content via unified interface

Simple searches

Offering a user-friendly reference interface

Cross-publisher searches

Searching uploaded electronic journals by publishing company

Access control

Subscription information governing access control is received from a given publishing company and meticulously applied to the delivery of uploaded content.

From July 2003, Kluwer Online content has been loaded and available for various specified operations. All visitors may search available references and browse abstracts.

Among the members of the National Universities library conference, subscribers to Kluwer Online can browse through the body text.

In order to upload the conditions of subscription contracts to NII-REO, the university in question must first upload the content of these subscriptions to NII, subject to an agreement governing the upload conditions among the university, the applicable publishing company, and NII. For inquiries, please contact the Content Division, Development and Operations Department.

E-mail reo@nii.ac.jp URL http://reo.nii.ac.jp

(Contents Division)

Establishing "Office of Intellectual Properties of Inter-University Research Institutes"

"Office of Intellectual Properties of Inter-University Research Institutes" was established within NII on September 16, with the goal of promoting the creation and effective use of intellectual property, including patents.

This organization will play a core role in establishing intellectual property divisions in inter-university research institutes. Based on Intellectual Property Strategy Outline, the Ministry of Education, Culture, Sports, Science and Technology has promoted the project to establish intellectual property divisions in universities. NII proposed to form a coalition of these organizations on behalf of thirteen inter-university research institutes, and that was adopted. This is a five-year project, with a FY 2003 budget of 40,000,000 yen. According to the plan, a model of the Intellectual Property Division will be founded within NII in FY 2003. Divisions will then be established within other institutes when they become non-governmental organization over the next fiscal year.

The office consists of a total of twelve members, including NII research staff. Members include Deputy Director General Masao Sakauchi and Prof. Shigeki Yamada, research staff at the National Institute of Genetics, an intellectual property manager, and staff members of the Research Cooperation Division at NII. An intellectual property manager is an expert engaged in commercial patent activities in a private company. This preparatory office will play a key role in developing intellectual property policies, formulating regulations, and establishing an intellectual property management system.

(Research Cooperation Division)

Support for the NACSIS-CAT project in the UK and Dispatch of the staff to the annual conference of European Association of Japanese Resource Specialists (EAJRS)

The joint conference of libraries participating in the NACSIS-CAT project in the UK was held at the Bodleian Library of the University of Oxford on September 22. NII's Prof. Akira Miyazawa, Director of the Research Information Research Division, and Mr. Shigeki Sugita, Chief of the Text Contents Section of the Contents Division, attended in the conference, exchanging opinions on system link and the establishment of a union catalog. This project was launched 1991, with the goal of establishing a union catalog of Japanese-language materials in the UK through the Catalog Information Service provided by NII, with the collaboration of the British Library and the Japanese division of university libraries in the UK. In conjunction with the conference, they all visited the British Library, the Bodleian Library of the University of Oxford, the library of the University of Sheffield, and the library of the London Language Centre of the Japan Foundation, all project participants, over the period September 18 to 22. and setup the newest version of NACSIS-CAT client software.

On September 24 and 25, they participated in the 14th annual conference of European Association of Japanese Resource Specialists (EAJRS), which was held in Valenciennes, France. Director Miyazawa reported on research and development activities and the operations of NII under a theme entitled "NII/NACSIS Update 2002-2003."

(Contents Division)

Musee des Beaux-Arts, Boulevard Watteau,Valenciennes, France

The venue of EAJRS annual meeting

NII Library Week 2003

NII Library Week 2003, which is briefing sessions on a variety of operations promoted by NII in cooperation with libraries of universities and other academic institutions, were held in five locations (Sapporo, Tokyo, Nagoya, Kyoto and Fukuoka) in Japan from September to October 2003.

Deputy Director Konishi, Development and Operation Department

At the hall in Tokyo

Contents are as follows:

Morning Session:

- Introduction of various services provided by NII
- GeNii (NII Academic Contents Portal Site)
- NII-REO (NII Repository of Electronic Journals and Online Publications)
- Support Project for Research Bulletin Dissemination

Afternoon Session:

- Introduction of Joint Project for constructing metadata database
- Current topics concerning the Catalog Information Service (NACSIS-CAT/ILL)
- ILL charge offset service
- Explanation about updating the holding records for Japanese journal data

These sessions were attended by a total of 1,300 people and followed by a lively question and answer session.

Materials distributed at the briefing sessions and answers to the main questions are available at the following Web site:

http://www.nii.ac.jp/CAT-ILL/contents/nlw_-2003_index.html

(Contents Division/Application Division)

Exhibition for DATABASE 2003 TOKYO

DATABASE 2003 TOKYO, the largest database exhibition in Japan, was held at the Exhibition Hall of the Tokyo International Forum over three days, from October 29 to 31, 2003. The exhibition was jointly hosted by the Database Promotion Center and the Japan Database Industry Association.

At the exhibition, NII demonstrated GeNii (Global Environment for Networked Intellectual Information) services, such as Webcat Plus (NII Book Information Navigator), CiNii (NII Citation Information Navigator) and NACSIS-ELS (electronic library service).

Webcat Plus in particular attracted a greet deal of attention, receiving high marks from visitors. We fielded many questions concerning future GeNii services.

According to the promoter, 83 companies and organizations participated in the exhibition, and 31,504 people visited over the three days.

(Dissemination Activities Division)

The 5th Library Fair & Forum: SPARC/JAPAN: Changes in International Scholarly Communications

On November 6, the SPARC/JAPAN (International Scholarly Communication Initiative) Forum was held at the 5th Library Fair through the joint efforts of NII, the Association of National University Libraries, Japan, and the Japan Association of Private University Libraries. The event ran from November 4 to 6, 2003.

In a keynote address, Prof. Shun Tsuchiya (Professor of Chiba University and Assistant to the Chairman of the Association of National University Libraries, Japan) discussed the background and trends of SPARC activities in the United States and the need for introducing SPARC into Japan. Following the keynote address, Prof. Jun Adachi (Professor and Head of the SPARC/JAPAN Promotion Office at NII) explained the SPARC/JAPAN

project and its current status. In a panel discussion on the theme "Academic Journals and SPARC/JAPAN," panelists, including Prof. Tetsuro Saso (Professor of Saitama University and Director of the Institute of Pure and Applied Physics) and Ms. Yuko Nagai (Secretary General of the Zoological Society of Japan) and attendants exchanged views on problems surrounding academic journals in Japan and the role of SPARC/JAPAN. All 133 participants expressed great expectations for SPARC/JAPAN.

Content and materials from this forum are available at the SPARC/JAPAN web site:

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

(Contents Division)

Keynote speech by Prof. Tsuchiya

Panel discussion

Cooperation in the "Training Program for Information Specialists in Japanese Studies" in FY 2003

In cooperation with the Japan Foundation and the National Diet Library, which jointly hosted the "Training Program for Information Specialists in Japanese Studies" from December 1 to 19, 2003, NII held part of the training program on December 8 and 9.

The "Training Program for Information Specialists in Japanese Studies" invites foreign information specialists in Japanese studies (such as librarians) to Japan, offering training programs on Japan-related information and information services to Japanese studies scholars. During this fiscal year, 14 librarians and researchers from ten countries participated in the program.

Various services provided by NII, including Webcat/Webcat Plus, NACSIS-IR, NACSIS-ELS, GeNii, SPARC/JAPAN, NACSIS-CAT/ILL, were introduced at the training session held at NII, as well as a usage overview for overseas users.

Before the training program, the catalog system workshop for foreign organizations that participate in the Catalog Information Service (NACSIS-CAT/ILL) was held from November 26 to 28. Three of the trainees of this training program attended this course.

Numerous questions were asked and opinions offered by trainees on the various services provided by NII, and the problems of and prospects for Japanese studies and information in foreign countries. Many of the questions were practical, referring to concrete cases, indicating their strenuous efforts and high expectations for NII.

(Dissemination Activities Division)

The training session at NII

Karuizawa Saturday Salon

From July 26 to November 8, 2003, Karuizawa Saturday Salon were held at the International Seminar House for Advanced Studies at Karuizawa. The lectures given are summarized below.

The 3rd lecture: July 26, 2003 : "Colors in the Tale of Genji"

Traditional Dyer

Sachio Yoshioka

Born in a dyehouse in Kyoto founded in the Edo period, Mr. Yoshioka in 1988 became the fifth-generation owner of "Dyehouse Yoshioka." He now devotes himself to reproducing traditional Japanese colors through plant dyeing. "I work with plant dyeing, which extracts colors from natural plants," says Mr. Yoshioka. "When I read the Tale of Genji, I can see the colors favored by the Heian aristocracy." In this lecture, he discussed chapters of the Tales of Genji such as Wakamurasaki and Tamakazura and explained the beautiful seasonal colors described in them, showing actual fabrics.

A presentation of plants used for dyeing, color samples based on dyes obtained from these plants, and video demonstrations of dyeing processes fleshed out Mr. Yoshioka's world. Participants became acquainted with the fascinating beauty of traditional Japanese colors.

The 4th lecture: September 6, 2003 : "Restructuring A Nationalized Japanese bank — My Three Years with Shinsei Bank"

Shinsei Bank, Limited
Chairman & CEO

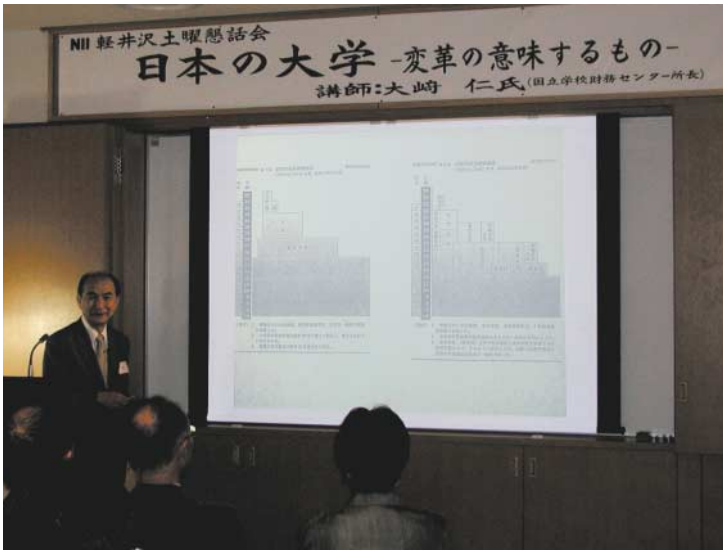
Masamoto Yashiro

Mr. Yashiro, an expert on business management, started by explaining in lay terms the causes of the slump in the Japanese economy (the "lost ten years") and bad loans held by banks. He then discussed the business model of Shinsei Bank, based on his own experiences, and made several proposals to advance the recovery of the Japanese economy and its companies.

The 5th lecture : September 27, 2003 :
"Universities in Japan — the Meaning of Reform"

Director General
Center for National University Finance

Hitoshi Osaki



Universities in Japan are currently in the midst of the most significant changes since those implemented by the Allied Occupation Forces after World War II. The national university is to be transformed into a kind of public corporation. University evaluation is to become compulsory and graduate schools expanded. In the lecture, Mr. Osaki gave an overview of these changes and considered their significance from wide perspectives.

The lecture was followed by a lively social event accompanied by a serenade of classical music and jazz.

Salon Concert
"Pleasure of a contra bass performance"

Contra Bass : **Kenichi Iga**
Executive Director, Japan Society for the Promotion of Science
Emeritus Professor, Tokyo Institute of Technology

Piano : **Genichi Hatakoshi**
Toshiba Research Consulting

Violin : **Tomoko Iga**
Machida Philharmonic Orchestra member

The 6th lecture: October 25, 2003 : Violin Concert
"An Invitation to the World of Art Nouveau through the Music of Richard Strauss"

Violinist

Junko Ohtsu

Pianist

Tomoko Okada

Program

Erich Korngold : Romance

Richard Strauss : Violin Sonata Op.18 in E-flat Major
Lieders —
"Wiegenlied"
"Allerseelen"
"Wie sollten wir geheim sie halten"

The son of Franz Strauss, a virtuoso horn player in the Munich Court Orchestra, Richard Strauss is regarded as the greatest composer Germany produced during the period from the end of the 19th century to the early 20th century when Art Nouveau was prevalent in arts in Europe. He was the successor of new concept of composition developed by Franz Liszt and Richard Wagner and went on to creat his own style. His masterpieces include

the symphonic poems such as “Don Juan” Op.20, "Also Sprach Zarathustra" Op. 30, which became well known due to its appearance at the beginning of "2001: A Space Odyssey," a notable movie directed by Stanley Kubrick in 1968, "Ein Heldenleben" Op. 40, and the opera "Der Rosenkavalier" Op. 59. Those works are some of the most popular repertoire of orchestras and opera houses around the world today.

The innovative harmonies and brilliant colors of Strauss’ music, created in use of chromatic progression and by a large orchestra using extra woodwinds and brass sections, draw us into the world of Art Nouveau designed with decorative curved lines. Strauss profoundly influenced the subsequent generation of composers. One of them is Erich Korngold who was known in his teens as the 'second Mozart’. After having achieved great success in Europe, he moved to Hollywood from Austria in flight from the Nazis and established himself as one of the most acclaimed composers in film scores.

(Excerpt quoted in leaflets handed out on the day of the lecture)

The 7th lecture: November 8, 2003 : “The Development of Communications and Broadcasting”

Professor,
National Institute of Informatics,
Director,
Development and Operations Department

Mitsutoshi Hatori

In the last Karuizawa Saturday Salon in FY 2003, Dr. Mitsutoshi Hatori, Professor at NII, explained in familiar terms the present status of and prospects for communications and broadcasting from an expert’s perspective. The content of his lecture is given below.

Terrestrial digital TV broadcasting is scheduled to start in December in Tokyo, Nagoya, and Osaka, then nationwide. While BS digital TV broadcasting, which began two years ago, is suitable for nationwide broadcasting, terrestrial digital TV broadcasting is suitable for regional transmission of information.

Remarkable progress has been made in high-speed broadband Internet communications through ADSL, cable modems, and optical fiber cables, and in Internet communications through cellular phones and mobile phones.

New services are expected, including the combined use of digital broadcasting and Internet communications and “One Source, Multi-Use” systems that make it possible to use the same content for both digital broadcasting and Internet communications.

(Excerpt quoted from leaflets handed out at the seminar)

(Dissemination Activities Division)

NII Public Lectures 2003 "Eight Words to catch the Informatics"

NII plans to hold public lectures to publicize its research activities and contributions. In FY 2003, the public lectures will revolve around the theme of "Eight Words to catch the Informatics" The lectures will involve in-depth explanations of eight key words covering areas ranging from basic to applied informatics.

First Lecture : July 11,2003

Ubiquitous Society — Future of Government, Business and Education in the Networked World

Professor, Human and Social Information Research Division,
National Institute of Informatics (to be appointed as of October 2003)

Yoh'ichi Tohkura

Joined NTT Electrical Communication Laboratories in 1972. From 1986 to 1997, he was with the Advanced Telecommunications Research Institute International and was appointed the Head of Hearing Research Department, ATR Auditory and Hearing Research Laboratories and the President of ATR Human Information Processing Research Laboratories. During 1997-2003, he was appointed the Director of three NTT Research Laboratories, and is currently an NTT R&D Fellow at NTT Science and Core Technology Laboratory Group. He received the M. E, and Dr. Eng. degrees in mathematical engineering and instrumentation physics from the University of Tokyo in 1972 and 1980, respectively.

Various aspects of the ubiquitous society were discussed, focusing on 1) cutting-edge technologies and their future directions, 2) visions for the future society, and 3) future relationships between humans and technologies. While positive aspects of the ubiquitous society such as human sensory and knowledge empowerment towards the "global brain" were introduced, its dark side was discussed. The lecture with a video demo of the future vision was informative and received well by the audience.

Second Lecture : August 25, 2003

Digital Library — How to get information promptly and widely

Professor, National Institute of Informatics,
Director, Research Center for Information Resources

Jun Adachi

Jun Adachi is a professor of National Institute of Informatics, Japan. He is also an adjunct professor of the Graduate School of Information Science and Technology,
University of Tokyo. His research interests are information retrieval, digital library systems, and distributed information systems.
Adachi received a BE, ME and Doctor of Engineering in Electrical Engineering from University of Tokyo in 1976, 1978 and 1981, respectively. He is a member of IPSJ, IEICE, IEEE, and ACM.

In his talk, a variety of cases where digital libraries store and provide their contents for us on the Internet are described. Based on these comparisons, the importance of search engines and their limitations are illustrated.

The next topics are the information services of NII, such as NACSIS-ELS. Their roles and aims are examined. The current issues on scholarly electronic journals are also discussed as well as the difficulties of copyright and digital rights management issues.

Third Lecture : September 18, 2003

GRID — How to utilize the computers which are dispersed across the globe

Visiting Professor, Center for Grid Research and Development
National Institute of Informatics

Kenichi Miura

Kenichi Miura is a visiting professor in High-end Computing at the National Institute of Informatics, and a fellow at Fujitsu Laboratories Limited. He is also the project leader of the Japanese National Research Grid Initiative (NAREGI) project. Dr. Miura received his Ph.D. degree in Computer Science from University of Illinois, Urbana-Champaign in 1973. Dr. Miura joined Fujitsu and engaged in the high end computing. From 1992 until January 1997, he was Vice President and General Manager of Supercomputer Group at Fujitsu America, Inc., where he was responsible for the entire supercomputer-related activities in the U.S. In June 2002, Dr. Miura was promoted as a fellow at the Fujitsu Laboratories Limited. Dr. Miura served as a visiting professor at the Computer and Communications Center of Kyushu University from September 1990 to November 1993, and also a visiting professor at the National Institute of Informatics since April 2003.
Dr. Miura's research interest includes grid computing, supercomputing, vector and parallel numerical algorithms and computational physics

Recently, the word "Grid" has appeared quite often in the newspapers and magazines. The lecture started with the historical background of the Grid, describing how the Grid computing started and why, how it is designed, then described interesting applications of Grid, such as distributed parallel computation, data grid, online instrumentation, virtual observatory, and utilizing idle PCs across the Internet.

The major national grid projects in Japan and overseas were also described in some detail, including NAREGI Project which the lecturer is in charge of. The lecture was concluded with future prospects of the Grid, including the non-technical commercial applications;

"Grid will be one of the fundamental Information Technologies (IT) of the 21st century."

At the end, some URLs for interesting grid projects and sites were provided for those who are interested more about the Grid.

Fourth Lecture : October 16, 2003

Bioinformatics — How to treat a human's genetic code by computer

Professor, Biosciences Information,
Foundation of Informatics Research

Asao Fujiyama

Completed the Ph.D. course at Nagoya University. After career at Osaka Univ., Institute of Molecular and cellular Biology, he became an associate professor at National Institute of Genetics in 1987. Since 2002, he has been a professor of National Institute of Informatics. His current research is bioinformatics, comparative genomics based on human and other primate genomes and development of bio-resources for genomic researches.

Recently, the topic of human genome can be seen frequently in the newspapers etc. The most general question might be the one like 'what is genome?' One can see the millions years history of life being written in genome.

The application to the medical treatment, the diagnosis and treatment, and the medicine becomes possible at the same time as understanding how the living thing has been evolved. On the other hand, information on human genome is the common inheritance in man, and it is necessary to note the protection of individual genetic information.

Two sides of the genome research, one in an application side aiming at full usage of the accumulated knowledge, the other in academic side seeking for deeper understanding of life, will mutually expand from now on.

Fifth Lecture : November 27, 2003

Algorithm — How to make a computer compute efficiently

Professor, National Institute of Informatics,
Foundation of Informatics Research

Ken Satoh

Graduated the faculty of science, University of Tokyo in 1981, after career at Fujitsu Laboratories from 1981 to 1994, he became an associate professor at Hokkaido University in 1995. From 2001, he is a professor at NII. His current research is a foundation of AI.

Algorithm is an arrangement of computing steps. There is a main concern in algorithmic theory called "complexity". "Complexity" is a measurement of quantity of computation. To design an algorithm for a given problem, we need to consider complexity of the algorithm to get a solution quickly. In this talk, I gave a demonstration of such complexity issue using various sort algorithms.

Special lecture on topic maps

On June 11, Mr. Steve Pepper delivered a special lecture on topic maps in the conference room on the 12th floor of NII.

Mr. Pepper is the convenor of ISO/IEC JTC1/SC34 /WG3, which is considering an international standard markup language. He is the editor of XML (XML Topic Maps) 1.0, the author of The TAO of Topic Maps, and the CEO of Ontopia in Norway. He is the world's leading expert on topic maps.

Topic maps are one of the proposed international standards for structured information, and are widely regarded as an important element of the Semantic Web, along with Resource Description Frameworks (RDF).

Researchers and graduate students at NII as well as researchers at Nihon University and NEC Corporation attended the lecture, which was followed by a lively discussion.

(Publicity and Survey Division)

Special lecture on metadata and metadata harvesting

On Monday, June 16, Ms. Jewel Ward of the Los Alamos National Laboratory delivered a special lecture on metadata and metadata harvesting in the conference room on the 12th floor of the NII.

Ms. Ward works on the construction of a repository for research results at Los Alamos National Laboratory and is one of leading members in efforts to develop metadata.

The three-part lecture provided detailed descriptions, including an overview of the Los Alamos National Laboratory, an overview of metadata and the current state of

metadata in the U.S., and measurement-analytic research on metadata registered to the Open Archive Initiative.

Characterized by a lively exchange of views, the lecture was attended by researchers and graduate students from our institute and researchers from INFOCOM CORPORATION and Fujitsu Limited.

(Publicity and Survey Division)

Exchanges between NII and the University of Washington, the U.S.A, Under the Memorandum of Understanding

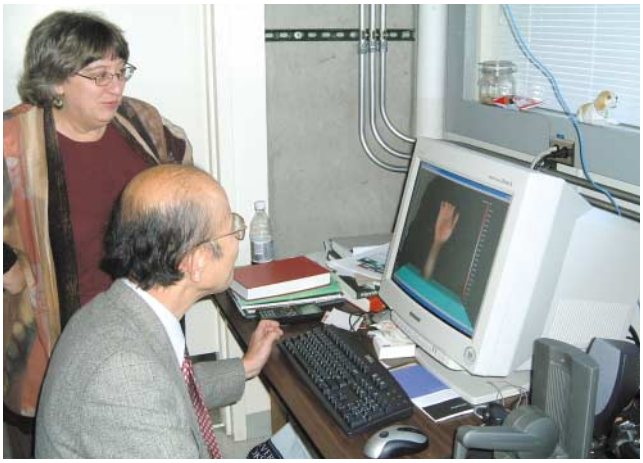
In March 2003, Prof. Angelino, visiting professor at NII, called at the University of Washington at the invitation of Prof. Bowen, former head of the UW's College of Engineering, and had discussions about possible research cooperation between the two institutions.

In June in the same year, the UW's graduate school of engineering and NII concluded the memorandum of understanding, or MOU, for research cooperation and exchange programs. It is the second such agreement concluded by NII with a US research institute after one with the University of Michigan.

The UW is a prestigious school located in Seattle on the U.S. West Coast, where Bill Gates, founder of Microsoft, and Paul Allan,co-founder, spent their childhood. A building dedicated to Paul Allan has recently been built on the campus and now houses the departments of Electrical Engineering, and Computer Science and Engineering. Cooperation between industry and academia is being encouraged at the UW and a number of major Japanese companies are funding research there.

In August 2003, Dr. Suzanne Wegphorst from the UW's Human Interface Technology Laboratory, or HITL, visited NII and exchanged views with NII researchers over research projects they engaged in.

In October, Prof. Angelino and Prof. Ono, Executive Director of Research at NII, visited the UW. They had talks with the heads of the HITL, Electrical Engineering Department, Computer Science and Engineering Department, and Information School. They also visited related facilities and exchanged opinions on areas where the two institutions could possibly cooperate. It was agreed that one possible area would be the application of



Simulation of Virtual Operation and Dr. Suzanne Weghorst (HITL)

With Prof. Bowen(left) , Emeritus Professor and Former head of the UW's College of Engineering at the campus

the virtual exhibition technology developed by the HITL and used for the ruins of Calakmul, the center of the Maya civilization in Mexico, to restoration work of Afghanistan's heavily damaged Bamiyan Buddhist statutes, as part of the Digital Silk Roads project led by NII.

One of the two most impressive memories of the October visit to the UW was the so-called Silicon Valley spirit, an attitude that seeks a specific outcome from one's research and tries to make use of it for society, particularly for the development of industry. The other was a spectacular view of Mt. Rainier commanded from the top of the Paul Allan building on the UW campus.

*(**Kinji Ono,** Professor, Visiting Professor Henri Angelino)*

Visit by Dr. Susan F. Zevin, Acting Director of Information Technology Laboratory (ITL) of the National Institute of Standards and Technology (NIST), US Department of Commerce, and other guests

On September 9, NII hosted visits by Dr. Susan F. Zevin, Acting Director of Information Technology Laboratory (ITL) of the National Institute of Standards and Technology (NIST), US Department of Commerce, Dr. David K. Kahaner, Founding Director of Asian Technology Information Program (ATIP), and Dr. Victor G. Stickel, Senior Technology Analyst of ATIP.

NII Deputy Director General Masao Sakauchi, Prof. Kinji Ono, Executive Director of Research, Prof. Masamitsu Negishi, Director of International and Research Cooperation Department, Prof. Mitsutoshi Hatori, Director of Development and Operations Department, and Ms. Miyuki Kuranishi, Director of Publicity and Survey Division, attended the meeting. Deputy Director General Sakauchi outlined NII's current operations, while Acting Director Zevin gave an overview of NIST/ITL.

The scene of the talks

According to her explanation, NIST/ITL is a major laboratory with 4,000 researchers in which a wide range of research on informatics occurs, comparable to NII. Both parties exchanged views on their research. The visitors from the United States appeared to show a strong interest in NAREGI (National Research GRID Initiative), the latest research project at NII, and Quantum Computing. They visited the center for Grid Research & Development, a base promoting the research in NAREGI. They visited Prof. Yoshihisa Yamamoto of Quantum Computing as well.

On this occasion, Acting Director Zevin visited Japan to participate in a US-Japan Computer Security Meeting.

(Publicity and Survey Division)

Academic societies participating in SPARC/JAPAN selected

On September 17, NII hosted a council for the " International Scholarly Communication Initiative" (SPARC/JAPAN), whose chairman is Dr. Ryoji Noyori, President of the Institute of Physical and Chemical Research, selecting 21 journals published by 16 academic societies and organizations who are partners in this project.

SPARC/JAPAN seeks to internationalize English-language journals published in Japan and widely disseminate the results of Japan-based research to the world, through encouragement of the digitization of English-language journals issued by academic societies, universities, and

From left, Dr. Noyori, Chairman of the council and Dr. Suematsu, Vice-chairman

research institutes in Japan. Launched at NII this fiscal year, this project is being promoted with funding from the Ministry of Education, Culture, Sports, Science and Technology and the cooperation of university libraries, the Japan Science and Technology Agency, and academic societies, all project partners.

From June 30 to September 3, NII sought project partners from organizations such as academic societies, universities, and research institutes in Japan who publish academic journals via a proposal entitled "Public Invitation for Participation and Proposals for the International Scholarly Communication Initiative (SPARC/JAPAN)."

This public invitation asked for participation proposals from academic societies and organizations backing the goals of SPARC/JAPAN and willing to make their English journals available online and seeking to enhance international competitiveness. Following deliberations at the council, 21 journals published by 16 academic societies and organizations were chosen from a total of 51 journal and 40 institution applicants.

Deliberations at the council on September 17

Joint conference on work groups on October 8

SPARC/JAPAN Selected Journals in FY 2003

	Journal Title	Publisher
1	Analytical Sciences	The Japan Society for Analytical Chemistry
2	Cancer Science	The Japanese Cancer Association
3	IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences	The Institute of Electronics, Information and Communication Engineers (IEICE)
4	IEICE Transactions on Communications	The Institute of Electronics, Information and Communication Engineers (IEICE)
5	IEICE Transactions on Electronics	The Institute of Electronics, Information and Communication Engineers (IEICE)
6	IEICE Transactions on Information and Systems	The Institute of Electronics, Information and Communication Engineers (IEICE)
7	IEICE Electronics Express (ELEX)	The Institute of Electronics, Information and Communication Engineers (IEICE)
8	Japanese Journal of Applied Physics (JJAP)	The Institute of Pure and Applied Physics
9	Journal of Biosciences and Bioengineering	The Society for Biotechnology, Japan
10	Journal of Chemical Engineering of Japan	The Society of Chemical Engineers, Japan
11	Journal of Mammalian Ova Research	Japanese Society of Mammalian Ova Research (JSMOR)
12	Journal of the Physical Society of Japan (JPSJ)	The Institute of Pure and Applied Physics
13	JSME International Journal	The Japan Society of Mechanical Engineers
14	Kodai Mathematical Journal	Department of Mathematics, Tokyo Institute of Technology
15	Mammal Study	The Mammalogical Society of Japan
16	Materials Transactions	The Japan Institute of Metals (JIM)
17	Monumenta Nipponica	Monumenta Nipponica, Sophia University
18	Polymer Journal	The Society of Polymer Science, Japan (SPSJ)
19	The Japanese Journal of Physiology	The Physiological Society of Japan
20	Tohoku Mathematical Journal	Mathematical Institute, Tohoku University
21	Zoological Science	The Zoological Society of Japan (ZSJ)

Following selection of the journals, a Joint Conference on Work Groups on SPARC/JAPAN was held on October 8. At this conference, NII exchanged views with selected organizations on concrete ways of promoting the project. Participants were organized into workgroups based on their field of activity. Nine workgroups were organized according to their related fields, and concrete support measures were considered and implemented.

As one of the first results of the project, we plan to make some of these journals issued after January 2004 available online and to enable national university libraries to subscribe to them on a site license basis.

(Contents Division)

Visit by the Director General of Mexico's National Council or Science and Technology (CONACYT)

On October 15, 2003, NII hosted a visit from Dr. Jaime Parada, Director General of Mexico's National Council for Science and Technology (CONACYT).

The Director General of CONACYT came to Japan to sign the Mexico-Japan Science and Technology Exchange Agreement with the Japan Society for the Promotion of Science. In recent years, Mexico has striven to enhance its competitiveness in the advanced fields of science and technology, particularly IT and environmental fields. The council agreed to strengthen ties with NII in the area of informatics research.

Director General and Deputy Director General of NII attended the meeting.

(Research Cooperation Division)

From left, Mr. Phillipe Sanchez,
Mr. Jaime Parada, Director General,CONACYT,
Director General Suematsu, Deputy Director General Sakauchi and Mr. Efrain Aceves

Visit by the President of Saint-Petersburg State Institute of Mechanics & Optics

From left, Director Negishi, of the International and Research Cooperation Department,
Vice president of Saint-Petersburg State Institute,
Director General Suematsu, President Dr. Vladimir Vasilyev
and two vice president of Saint-Petersburg State Institute, Prof. Angelino

On November 7, 2003, NII hosted visits from Mr. Vladimir Vasilyev, President of the Saint-Petersburg State Institute of Mechanics & Optics in Russia, and three Vice Presidents. The visitors came to gather information on the management and operation of an electronic library.

Following a courtesy visit by Director General, Director Negishi, of the International and Research Cooperation Department, the staff of the Contents Division briefly described NII's electronic library operations.

(Research Cooperation Division)

Award

Director General Yasuharu Suematsu is awarded the Person of Cultural Merit award in FY 2003

The Japanese government announced 15 individuals, including Director General Yasuharu Suematsu, as recipients of the Person of Cultural Merit award for FY 2003.

Director General Suematsu has been active for many years in research and education related to engineering, especially in the field of optical fiber communications. He has made remarkable achievements and trained numerous first-rate researchers. The award was given for major contributions to the development of optical fiber communications and related interdisciplinary fields.

Awarding ceremony of the person of cultural merit at Hotel Okura on November 4

Lasers are more effective than electromagnetic waves in high capacity communications. During the days when rapid progress was made on research in optical fiber communications technology in Japan and the United States, Director General Suematsu engaged in research on GaInAsP (crystalline compound semiconductor) semiconductor lasers, achieving continuous oscillation of long wavelength semiconductor lasers at room temperature and demonstrating the importance of these lasers. In addition, in response to the problem whereby direct modulation of these lasers at high speed limits the transmission band, he proposed and fabricated the world's first GaInAs/InP dynamic single mode laser with a distributed reflector. This technology is an essential part of current high-speed optical fiber communications systems.

Director General Suematsu has played a leading role in the field of optical fiber communications, now a major research field, since its earliest days. He has also trained numerous capable researchers. He is also a member of several organizations (including service as Chairman of the Council for Science and Technology since February 2003), contributing to the promotion of science. He enjoys a high international reputation for his research accomplishments and development of human resources. His contributions to science and culture in Japan are invaluable.

Detailed information on the research and projects of NII is available at our Website.

- http://www.nii.ac.jp/index.html
- http://research.nii.ac.jp/index.html
- http://www.nii.ac.jp/nii-service-e.html

NII News
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