SDM
System Design and Management
NEWS

July 2011

Students and professors in "Waso style (Japanese traditional clothing)"

Message from the Director and Dean
Jigasakko

Takashi Maeno
Director, SDM Research Institute
Dean, Graduate School of
System Design and Management

What have we been up to this especially hot summer (due to energy-saving measures) just four months after the Great East Japan Earthquake? The Graduate School of System Design and Management (SDM) initiated various projects to overcome the disaster. Practical projects include 'Avert Blackout Project' with TOKYU CORPORATION, IBM, and Elephant Design as well as 'Fukushima Support Project' planning with IBM and Fukushima Prefecture.

Among unique and playful projects, SDM has been encouraging "Waso style" (Japanese traditional clothing) on campus to emulate teacher Fukuzawa Yukichi's pioneering spirit. Fukuzawa, who advocated the equality of all social classes at the end of the Tokugawa feudal regime, is said to have preferred casual commoner's clothes rather than the formal hakama dress of the samurai.

This summer, SDM is promoting "Waso style" among faculty and students in emulation of Fukuzawa's spirit, which combines the pursuit for cutting-edge knowledge with respect for Japanese traditions. Not only is Japanese traditional clothing "cool" to the eye, being attired in extraordinary style gives us an opportunity to think innovatively about designing the future. We see this as an expression of SDM-ness. Together with this campaign, we have designed a Japanese folding fan emblazoned with the words; jiga sakko (a call to set new standards and create new traditions). We hope students and faculty will passionately engage in creating a new future while playfully engaging with the past. SDM's trans-domain research collaboration will continue to lead in designing new technological systems and social systems.

News

TOPIC 1

"Waso style" (Japanese traditional clothing) project

"Waso style" project brain-storming session

The SDM faculty has been discussing how to respond to electricity shortages following the earthquake. Among the many systemic solutions considered, one of the more unique ones proposed was from Associate Professor Ken L.V. Hijino: encourage the wearing of traditional Japanese clothing as a symbol of the Fukuzawa (founder of Keio University) spirit.

Fukuzawa was not only a pioneer, but an educator who valued the spirit of freedom and social harmony. Wearing Japanese traditional dress not only embodies these values, but also looks "cooler" to the eye during these muggy summer months.

During the "waso style" campaign period, we are encouraging teachers and students who so wish to wear Japanese traditional dress and sandals on campus. This campaign is an opportunity to reconsider traditional clothing culture which our forebears have developed over centuries to match the muggy summer climate of Japan. We also hope that wearing something out of the ordinary would inspire us with innovative ideas for the major themes that SDM continues to engage in: the future of Japan's energy policy, natural disaster prevention policy, and reviving regional communities.

SDM original Japanese fan: Jiga sakko
"pioneering new classics"

TOPIC 2

Avert Blackout Project

Press release

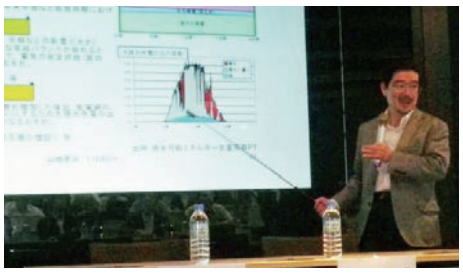
SDM, isana.net, inc, Elephant Design, TOKYU CORPORATION, and IBM set up the Avert Blackout Project consortium and launched the Avert Blackout Project (Project) for local residents around the Futakotamagawa areas (Setagaya-ku ,Tokyo) served by Tokyo Electric Power Co.

The Project plans to collect and visualize information on participants' efforts on power saving through their mobile devices such as mobile phones and smart phones and to organize drills to take power-saving actions based on this information by utilizing social networking services, such as Twitter. Moreover, we aim to expand this result not only to Tokyo Electric Power Co. service areas, but also to areas hit by the Great East Japan Earthquake and East Asian areas that are frequently hit by earthquakes.

The Project will run for 100 days from July 1 when electricity demand increases.

Press release ▶ http://www.keio.ac.jp/ja/press_release/2011/kr7a43000006qj0x-att/110630_1.pdf (in Japanese)

TOPIC 3 2nd Urgent meeting "Future energy system design for overcoming earthquake disasters"



Expression by Kenji Yamaji, Research Institute of Innovative Technology for the Earth

An urgent meeting under the theme "Future energy system design for overcoming earthquake disasters" and titled "No. 2 future energy demand supply plan" was held on June 1 at Hiyoshi Campus following the first meeting on April 27.
Based on the first meeting, we extensively discussed the future energy situation regarding supply and demand in Japan. Particular focus was placed on renewable energies that are expected to be new energy sources, progress and trends in new energy technologies, and the future outlook for environment-friendly technologies since nuclear power supply and demand is in question after the closure of the Hamaoka power plant. Moreover, discussion was extended to future strategies for long-term energy supply and demand and how to diversify and secure energy sources in response to the current situation in which the Basic Energy Plan for 2030 seems to have been dropped.

TOPIC 4 Seminar on research on high accuracy positioning technologies

Lecture by Associate Professor Naohiko Kohtake

The SDM Research Institute held a research seminar addressing the latest trends of positioning technology using Global Navigation Satellite Systems (GNSS), such as GPS, and its applications on June 2. The satellite positioning environment has been changing; the coming multiple GNSS era is represented by Quasi-Zenith Satellite "Michibiki" (Japan), which was successfully launched in September 2010, as well as GPS (US), GALILEO (Europe), GLONASS (Russia) and COMPASS (China). Satellite positioning is becoming essential social infrastructure that serves to sustain safe and secure societies. The seminar included lectures and demonstrations with a receiver by Japan Aerospace Exploration Agency (JAXA), which develops and operates quasi-zenith satellites, experts who are using GNSS, and an engineer from JAVAD GNSS Inc. (US) that has advanced technologies on GNSS receivers. From SDM and the SDM Research Institute, Yoshiaki Ohkami, Executive Advisor of the SDM Research Institute, gave the opening address and delivered a lecture on positioning technologies. Associate Professor Naohiko Kohtake spoke about location-based services using positioning satellite technologies. In spite of heavy rain, over 130 people attended and participated in a lively discussion after the lecture and demonstrations.

TOPIC 5 SDM Special Open Lecture "New smart Japan carved out by smart grids"

Norio Murakami, President of Norio Murakami Office (former President and General Manager of Google Japan) gave an open lecture titled "New smart-Japan carved out by smart grids" on June 3 in Room DB201, Forth Building Independence Wing, Hiyoshi Campus.
The earthquake, tsunami, and nuclear power accident led Japan toward a radical overhaul of its nation-building plans. Especially, smart grids will take a decisive role in reconstructing the electricity infrastructure. Norio Murakami outlined what smart grids are and how they will create new smart communities in Japan. The considerable development expected in the future will showcase SDM's targeted large-scale complex system design capabilities.

Lecture by Norio Murakami

TOPIC 6 Special Lecture by Professor William A. Crossley

Special Lecture by Professor Crossley

Professor William A. Crossley from Purdue University (Indiana, US), which has signed a letter of intent for cooperation with SDM, visited SDM on June 9 -12, 2011. Purdue University, a leading university known for its science and technology programs in the US, is also one of the top-ranked universities for aeronautics and astronautics in the world. The first astronaut, Neil Armstrong, is from Purdue University. Professor Crossley introduced Purdue University and gave a special lecture on research on system of system, followed by a lively discussion with SDM faculty members and students. In SDM, Associate Professor Naohiko Kohtake, Associate Professor Seiko Shirasaka, and Project Associate Professor Nobuaki Minato are conducting research on aerospace systems, so further collaboration on research is expected. SDM is proactively promoting human resource exchanges with Purdue University. Two SDM master students will visit Purdue University as visiting scholars this summer.

TOPIC 7 SDC Meeting Disaster Restoration Design 01

Lecture by Izumi Yoshida, Parliamentary Secretary of Finance

Students in the Social Design Center held an open-invitation event titled "SDC Meeting for Disaster Restoration Design 01 – with Parliamentary Secretary for Finance, Izumi Yoshida" on June 11. The event aimed to consider what we can do for the residents of Fukushima, who are still suffering from the nuclear-power accident and from harmful rumors even three months after the Great East Japan Earthquake. The room was filled to capacity with over 50 participants.
We invited Izumi Yoshida, member of the House of Representatives (Parliamentary Secretary for Finance) and Head of the DPJ Fukushima No.5 Constituency as a special guest to give his thoughts on the discussions. Kicking off with this event, SDC has launched the Fukushima Disaster Restoration Project. We will continue to regularly hold such events and conduct field studies and study meetings.

SDC Meeting

Social Design Center (SDC)
▶ http://lab.sdm.keio.ac.jp/sdc/ (in Japanese)

TOPIC 8 The first VSE forum

The SDM Research Institute established VSE Center on February 28, 2011 to focus on system development in VSE (Very Small Entities) and promote process improvement with the aim of assisting improvement of development sites by industry-academia-government collaboration. On June 15, VSE Center hosted the first VSE forum, targeting mainly those engaged in system development, software development, and business process improvement in companies, at the Collaboration Complex on Hiyoshi Campus. Lectures and discussions were centered on ISO/IEC29110, the international standard for software development process models enacted in January 2011. In his opening speech, Takashi Maeno, Director of the SDM Research Institute, introduced domestic and international trends in process improvement and process assessment, and gave an example that applied ISO/IEC29110. Associate Professor Seiko Shirasaka then proposed a new Japanese manufacturing style that combines Japanese manufacturing and western standard processes. After that, Associate Professor Naohiko Kohtake, Director of VSE Center, explained how the Center was established and outlined ongoing projects and future activity plans.

Joho Sangyo Shinbun featured an article about VSE Center's establishment.

▶ http://www.sdm.keio.ac.jp/news/2011/07/12-165341.html (in Japanese)

Lecture by Associate Professor Seiko Shirasaka

TOPIC 9 Associate Professor Kohtake becomes the Chairman of the IMES (Indoor GPS) consortium

The IMES consortium was established on June 23 for promoting IMES, which enables interior and exterior seamless positioning by improved on-board software in the existing GPS receivers. Associate Professor Naohiko Kohtake was named chairman. IMES is a positioning system that JAXA originated in Japan. GPS users can find their location not only outdoors, but also indoors, through indoor IMES transmitters, which store location information such as coordinate data, in advance. As some companies are already developing IMES transmitters and receivers, this consortium was established to accelerate standardization, internationalization and actual operation of IMES. On June 23, about 150 people, including Hirofumi Katase, Councilor, Cabinet Secretariat, and Strategic Headquarters for Space Policy, and Koji Saeki, Manager, Space Development and Utilization Division gathered for the organization meeting and the memorial seminars. The appointment of the chairman and board members, business plans, and the terms and introduction of service cases of IMES were also on the agenda. Associate Professor Naohiko Kohtake, who is promoting a real-time disaster prevention project by using GPS, Quasi-Zenith Satellite, and IMES, in next-generation energy-efficient and highly reliable fundamental IT development projects with industry-academia-government collaboration, was nominated to be chairman with the backing of industry.

IMES consortium web site

▶ http://www.jsforum.or.jp/en/index.html

Inaugural address by Associate Professor Naohiko Kohtake

TOPIC 10 The second workshop of SDM 2011 Design Project ALPS

The second workshop of 2011 Design Project ALPS (Active Learning Project Sequence), sponsored by Norinchukin Bank, was held on June 24 and 25. Already 14 student groups have started working on projects proposed by 15 companies related to "Symbiosis and Synergy." Following the previous workshop, lectures on methodologies and ways of proposing new ideas were given in the second workshop.

At first, Dr. Afreen Siddiqi at Massachusetts Institute of Technology (MIT) gave a video lecture on clarifying objectives and problems, followed by Dr. Sun Kim explaining methodologies to clarify, share, and propose ideas by creating simple prototypes. Via video, Dr. Leon Hermans of Delft University of Technology (TU Delft) gave a lecture on stakeholder analysis and Dr. Jaco Quist lectured on Backcasting methods. Backcasting, which first defines a desirable future image and then thinks backwards about policies and programs necessary to realize the future, is gradually gaining use in design and water resource management.

From SDM, Associate Processor Tetsuya Toma gave a lecture on project management and Associate Professor Naohiko Kohtake spoke on verification and validation. Furthermore, Dr. Whit Fowler of Stanford University talked about QFD (Quality Function Deployment), Value Graph, Benchmarking, and Function Structure Maps. Additional lectures and exercises were provided for students during the two-day workshop.

Prototype presentation by students

TOPIC 11 Stanford Center for Design Research (CDR)/ d. school workshop

Dr. Sushi Suzuki (Instructor in Design Innovation at Ecole des Ponts Paris Tech) and Dr. Sun Kim held a Stanford Center for Design Research (CDR)/ d. school workshop on June 26 and 27.

The workshop focused on not only lectures, but also on group work and students' presentations.

At first, students learned the importance of empathy to reflect the users' needs through group work in which students played the roles of users and wallet developers, heard opinions from both sides, and made a paper prototype of a wallet. Then, five student groups discussed and created new ideas on "transportation problems from a businessman's perspective", "trash and recycling problems from a housewife's perspective", "social problems from a child's perspective", "exercise-related problems from a businessman's perspective", and "exercise-related problems from a child's perspective". Through such two-day lectures and activities, SDM students learned and practiced design thinking methods.

Lecture

TOPIC 12 Researcher Koichi Homma wins the Incentive Award, from the Museological Society of Japan

Homma's paper is in "Museological magazine" Vol.35 No.1

The Museological Society of Japan awarded Koichi Homma, an SDM Research Institute researcher, the Incentive Award for young researchers for his thesis "The Actual Conditions and Issues Surrounding Public Museum Websites: An Analysis from the Viewpoint of the General Public and Proposals for Improvement" on June 11 at the general meeting of the Museological Society of Japan. One of the issues museums are facing is a decrease in the average number of visitors. His research aims to expand the opportunities for interaction between residents and museums by enhancing museum values via the internet. This new approach is valued as an impetus to museology research.

At the conference followed by the general meeting, a symposium related to the disaster in March was held with the keywords: "community," "network," and "connection." As the importance of the networks among public agencies as well as strong ties between local people and museums has been pointed out, it is expected that further research in this field will contribute to the development of such networks and ties.

Discussion in the symposium

Laboratory Profile

Introducing two labs directed by Professor Ryuichi Teshima

Professor Ryuichi Teshima

Former US Washington Bureau Chief of Japan Broadcasting Corporation (NHK)
His written works cover diplomacy, security, politics, economics, and intelligence.
Research Interests: Intelligence and crisis management of huge and complex systems

VERSTA Lab: VERSTA Laboratory

Representative: Professor Ryuichi Teshima

Members: Professor Takashi Maeno, Project Professor Toshiyuki Yasui, Associate Professor Naohiko Kohtake, and master's and doctoral students

【Overview】

VERSTA Lab aims to support the Amazon Valley by popularizing a new farming method, Agroforestry, with a nonprofit organization, VERSTA.

Lab meeting

Agroforestry activity

VERSTA's website (nonprofit organization)
▶ http://www.versta.org/?lang=en

* The name VERSTA is a combination of "green" (verde) and festival days (festival) taken from Portuguese and Spanish, to mean '"green public holidays and festival days." VERSTA has applied for official NPO authorization.

【Activities】

It is important to preserve and nurture forests and oceans to maintain the global environment; they are sizeable carbon sinks. Approximately half of the carbon dioxide in the world is absorbed by forests, which compose only nine percent of Earth's surface. Especially, Amazon rainforests in South America have played a very important role. However, they are gradually shrinking due to illegal deforestation. As a result, global carbon dioxide levels have risen and we fear global warming.

Agroforestry is drawing attention as a method to prevent illegal deforestation and to slow global warming. Agroforestry, which utilizes agricultural methods aimed to stabilize farmhouse income by combining agricultural and forestry management techniques, is considered to be sustainable because it prevents illegal deforestation and enables maintenance and reproduction of natural environments such as tropical rain forests.

The NPO VERSTA was established to support agroforestry both technologically and financially. VERSTA Lab supports their activities and suggests new NPO operations using system design and management methodologies. Our student Lab members serve on VERSTA's advisory board.

Social Life System Laboratory

Representative: Professor Ryuichi Teshima

Members: Associate Professor Naohiko Kohtake, master's and doctoral students, and researchers at the SDM Research Institute

【Overview】

Social Life System Lab aims for "from concept to realization of next-generation medical systems." We validate efficiency of sustainable new system design to solve various medical issues of the day.

Visit with Japan's Ambassador Fujisaki (front center) during the intensive lecture in Washington D.C.

【Activities】

Collaboration with an SDM subject "Medical and Pharmaceutical Research and Development Systems"

Some of the doctoral and master's students and SDM Research Institute researchers in this lab took the intensive class in Washington DC in January 2011. They visited the cutting-edge Vaccine Research Center at the National Institute of Health (NIH) and attended lectures by Project Professor Sachiko Kuno and Dr. Ryuji Ueno, both leading researchers. They also enjoyed a discussion with Ambassador (and SDM Guest Professor) Ichiro Fujisaki at the Embassy of Japan in Washington DC.

【Future Activities】

Research Topics: System design for industry-academia-government collaboration in medical services

Members: Toru Ogawa (SDM Research Institute researcher, Doctor, and MD)
Research Subjects: Pharma Valley Plan in Shizuoka and Kobe Medical Industrial City Plan
Methodology: Regional research, financial analysis (local governments and hospitals), etc.

(Other activities)

- Joint research to solve drug lag problems with medical departments at other universities
- Joint research to solve problems with medicinal chemical manufacturing with an OTC medicine manufacturer

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