

第20部

インターネットを用いた高等教育環境 / Asian Internet Interconnection Initiatives

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第1章 Overview of AI3 and SOI ASIA

1.1 AI3

AI3 (Asian Internet Interconnection Initiatives/read: ei-triple-ai) Project is an international research project established between research institutions in Asia in 1995 supported by WIDE Project and JSAT Corporation (currently, SKY Perfect JSAT Corporation). AI3 started its test-bed network operation in October 1996 with the establishment of the NAIST-ITB KU-band link and then launched the C-Band based testbed from 2001 at Keio University SFC.

1.2 SOI Asia

SOI Asia (School on Internet Asia/read: soi-asia) Project is an international education consortium established in 2001 by WIDE Project with the objective of achieving education collaborations between Southeast Asian universities on the internet utilizing the infrastructure technology, developed by AI3 Project. This consortium has grown into a strong community, where it does not only share university courses but also establishes infrastructure to support university-based entrepreneurship and helps each other at the time of disasters.

1.3 Project Achievements

AI3 developed and deployed a unidirectional link (UDL) on the network testbed, contributing to the standardization of the UDLR technology. AI3 was running IPv6 and multicast on this UDL that contributed to connecting wider area in Asia. The collaborative research activities of AI3 along with the IT HRD programs of SOI Asia have played a major role in the development of satellite internet infrastructure in the Southeast Asian region. Through both projects, participating countries

in the region have acquired the advanced technology and operation know-how of the internet. The partner organizations, as well as the researchers, have led the internet infrastructure in their respective countries, resulting in the development of the internet infrastructure as we have now witnessed in the region. In fact, from this community, we have three founding members who are recognized as inductees in the Internet Hall of Fame as well as Jon Postel Awards recipients.

第2章 The 51st Meeting

AI3 and SOI Asia held a meeting once online in 2020 instead of the usual twice a year due to the coronavirus pandemic. The meeting was held three days in a row from September 27 (Sun) to September 29 (Tue) at 16:00-19:00 JST using Zoom.

Around 40 participants from 11 countries joined the meeting to discuss the future development of the internet and university education in Asia.

The program and summaries are as follows:

September 27, 2020 16:00-19:00

The programs are:

1. Welcome remarks by Keiko Okawa
2. Update from Jun Murai
3. Panel Session on university's teaching during pandemic
4. Research presentation

Jun Murai gave an overview of the updates around the region, mainly touching upon APIDT, APNIC Foundation, and ARENA-PAC.

In the panel session, five panelists: Md. Saiful Islam (BUET), Tat-Chee Wan (USM), Muhammad Niswar (Unhas), Alwin Sambul (Unsrat), and Kotaro Kataoka (IIT-H) shared their experience in responding to the pandemic, while Masaki Umejima (Keio) introduced a development plan of distance education in Japan, which is based on the experience in SOI Asia. The discussions were mainly on the course delivery challenges and solutions.

The research presentation session heard two presentations from Roel M. de la Cruz (DOST-ASTI) on the evolution of data science for remote sensing as well as from Mohammad Muntasir Hassan (BUET) on a coronavirus detection technique.

how they responded to the pandemic. NRENs in partner countries are largely connected to TEIN, and they vary between countries in terms of funding structure. In education, Myanmar and Timor Leste had classes suspended, while others continued using online.

The academic steering meeting introduced a W3C MOOC platform called W3CX, called for participations in a Japanese language course, and future SOI Asia programs: Asia Pacific network engineer course, which planned to be conducted in cooperation with APNIC Academy and AITAC, Quantum Computing course on FutureLearn, and EBA Fieldworks.

September 28, 2020 16:00-19:00

The programs are:

1. Operators meeting
2. Academic steering meeting

In the operators meeting, partners briefly reported their situations in connectivity, NRENs, and education, including

September 29, 2020 16:00-19:00

The directors meeting discussed the following:

1. The current situations of NRENs and how to enhance them.
2. The future satellite technology by SKY Perfect JSAT and how to better use its satellite networks for RENs.
3. AI3 planning for the next five years, including strategic



Figure 1 A Zoom screenshot of some meeting participants.

plan, research proposal, and research meetings.

4. SOI Asia planning for the next five years, including collaboration with APNIC, Interop, and new models of collaborations such as new teaching sharing model and faculty development.

An online social event using social chat was held after the closing, where participants introduced their onigiri while chatting on the platform.

第3章 SOI Asia Course: Introduction to Spoken Japanese

Introduction to Spoken Japanese (ISJ) course was conducted in eight lessons between November 7 and December 26 2020 for SOI Asia Project partner universities. A total of 15 classroom hours were conducted online in real-time. This course used ORP Gym: Online Oral Repetition Practice Support System during classroom hours to improve the number of opportunities for oral practice and feedback.



Figure 2 Participants attendance registration by geographical location.



Figure 3 Screenshot of Introduction to Spoken Japanese course.

Participants from four SOI Asia partner universities and Keio University joined the course as students. A total of 12 students completed the course by meeting the criteria, and they reported high satisfactions in joining the course.

第4章 SOI Asia Course: Advanced Topics for Marine Science & Technology

Advanced Topics for Marine Science & Technology held by Tokyo University of Marine Science and Technology (TUMSAT) aims to explain advanced technology and tools of marine science, engineering, logistics, information technology and maritime education, which are applied for the present operation and management of marine industries. The annual course had been conducted since the beginning of SOI Asia in 2002, more than 100 lectures were held for students, staff, lecturers from SOI Asia partner universities and TUMSAT.

This academic year, all 14 classes were done through ZOOM and its cloud. Various topics that were commonly important among partner universities of SOI Asia, such as, marine environment, marine energy, or hydrogen fuel cell, logistics, and GPS/GNSS, were shared from TUMSAT.

This year reached the last day of the series of two-decade courses related to marine science and technology through SOI Asia project. The first lecture series was provided by Tokyo University of Fishery as 2 days joint workshop with the University of Sam Ratulangi (Indonesia) on September 17-18, 2002 with 5 lectures. In 2003, the Japanese Society of Fish Pathology conducted the lecture series in 2 days workshop in October and November. Fishery topics were very popular among partner universities in Indonesia.

In 2004, Tokyo University of Marine Science and Technology (TUMSAT), established by the merger of Tokyo University of Mercantile Marine and Tokyo University of Fisheries became took over the course development role and the topics were expanded to include engineering and technology. Since then, TUMSAT has been delivering quality courses every year to

the partner universities in Southeast Asia. Not only lectures but also students' presentations from various places were sometimes conducted.

We would like to express our sincere appreciation to the admin, staff, lecturers, and coordinators of TUMSAT for long term commitment and contributions to the project.

第5章 Future Plans

The discussions in the 51st meeting were built upon the 50th meeting, where we are going to continue to work together with SOI Asia / AI3 partners in Internet development, deployment and education in the Asian region. The following specific areas were identified:

- Active participation in the development of ARENA-PAC, SARENA-PAC, and other RENs in the region.
- Asia Pacific network engineering course, collaborating with APNIC and AITAC.
- Joint course development for EBA (Evidence Based Approach), including the fieldwork design in Asian region.
- Developing a hybrid-flexible learning platform and a microcredential issuing system.
- Research collaborations in non-terrestrial networks, dynamic networking, data science, IoT and disaster recovery topics.

As the pandemic continues, we are likely to hold the next meeting online, but we are keen to hold our meetings in person as soon as the situations are deemed safe for travel.

In 2021, AI3 will celebrate its 25th and SOI Asia 20th anniversary. Towards the future, we have started the discussion about new challenges in the NTN (Non Terrestrial Network) and explore the possible contribution to wider network communities such as Guam Open Research Exchange activities and ARENA-PAC.