



UNESCO's Science Education and Space Activities

United Nations/Malaysia Expert Meeting on Human Space Technology

14-18 November 2011

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UNESCO appreciates the efforts of UNOOSA of bringing together UN Agencies to take advantage of the wonderful opportunity of using the ISS

Special thanks to Mr. Takao Doi for his strong interest in having UNESCO onboard

UNESCO works in the area of education with the following space members of the ISS:

NASA

ESA (World Heritage sites)

JAXA (World Heritage sites)

And on Education related to Earth Observation within
GEO/GEOSS

CEOS

Geologic Application of Remote Sensing (GARS)

Space Education Programme



Current situation at UNESCO (36th General Conference)

22% of UNESCO's budget is 'frozen'

Strong need to focus on and reinforce UNESCO's current activities

As a conclusion, UNESCO proposes to this meeting to work on the use of the ISS for education, reinforcing current partner activities, avoiding to enter into completely new activities.



UNESCO's main areas where the ISS / education could be applied

Peace

World Heritage

Biosphere reserves

Geoparks

Natural disasters

Biodiversity

Ecosystems

Climate change

Basic sciences

Earth Sciences education

Oceans



UNESCO labeled sites



Mount Etna as seen by ISS

UNESCO's PEACE mandate:

building peace in the minds of men and women

The International Space Station is an excellent example:

- Peaceful uses of space
- Scientific and technological research cooperation for the well being of humankind

UNESCO suggests to highlight these aspects through educational activities being implemented jointly



Examples of activities suggested by UNESCO

Using current UNESCO network of universities and the Associated Schools Network to encourage the use of the ISS as educational means

Targeting:

- Undergraduate and graduate students
- Teachers and researchers
- With priority Africa



Mount McKinley as seen by ISS

For example:

- Inviting university students to work on UNESCO labeled-sites
- They would collect *in-situ* data and will take notes on local observations
- Back to class they will activate the ISS EarthKam to take images of the UNESCO-site on which they did the field visit
- They will then correlate their field observations with the ISS-image
- They will write a report of their conclusions
- Finally they will share their observations, conclusions and recommendations with the UNESCO site-manager

There is a tremendous amount of educational potential using the ISS

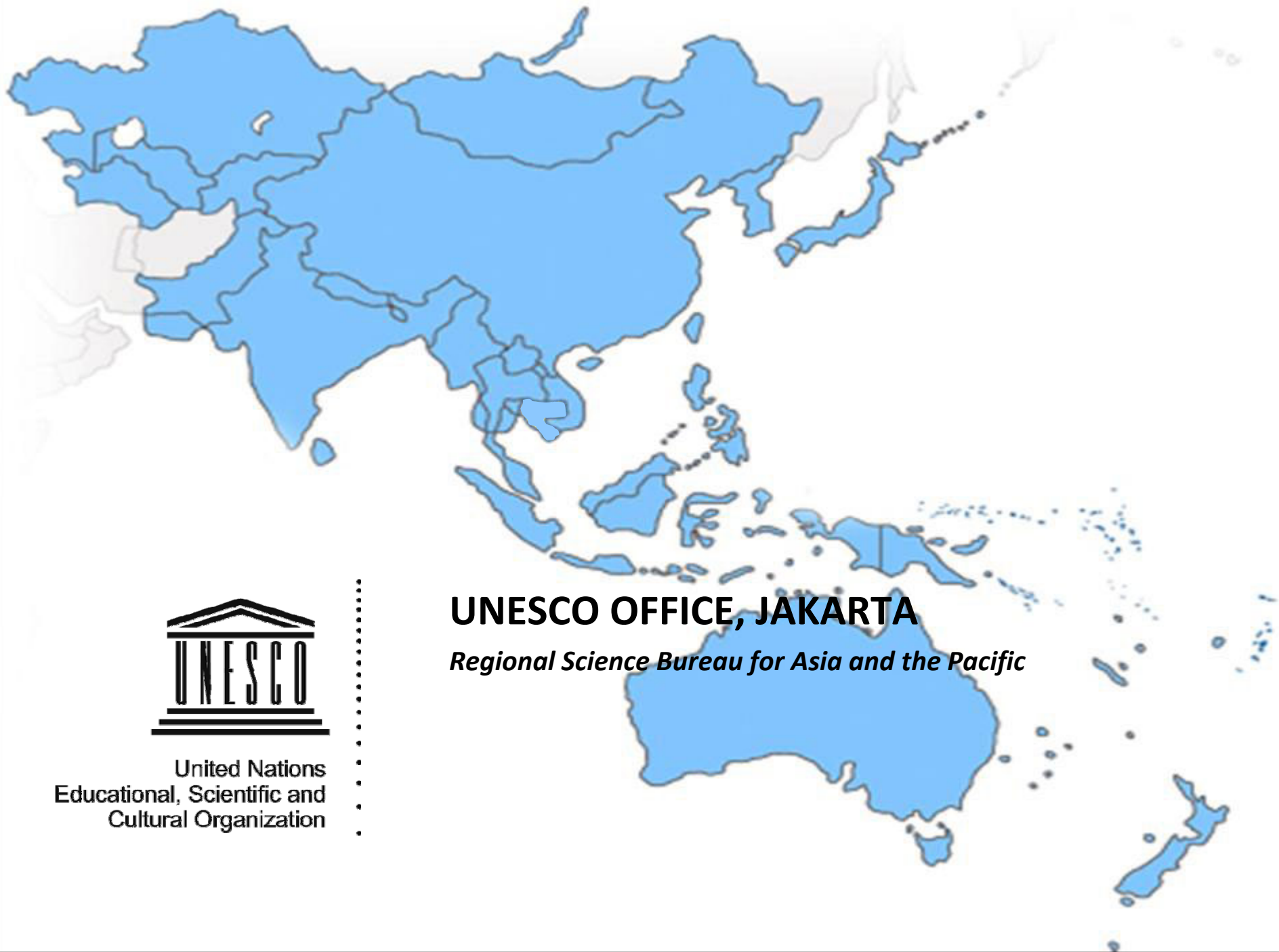
On account of limited resources, UNESCO suggests therefore to focus on current working areas of partners.

Additional funds will be sought through fund raising.

Current educational material about the ISS developed by ISS space partners could be used by UNESCO.

In addition UNESCO will mobilize its current educational networks to make further use of the ISS as applied to UNESCO themes of work.

UNESCO could also work in close cooperation with other UN sister organizations in order to use their associated results using the ISS as additional educational material.



United Nations
Educational, Scientific and
Cultural Organization

UNESCO OFFICE, JAKARTA

Regional Science Bureau for Asia and the Pacific



About UNESCO Jakarta

The UNESCO Office, Jakarta serves two dimensions.

- As a **Regional Bureau for Science**, covering the Asia and Pacific Region, with programmes in Natural Sciences including Geology, Ecology, Basic and Engineering Sciences, and Disaster Preparedness.
- As a **Cluster Office**, representing UNESCO in Malaysia, Brunei Darussalam, Indonesia, the Philippines, and Timor Leste in all UNESCO fields of competence: Education, Culture, Communication and Information, and Natural Sciences.

Challenges in S&T in the Asia-Pacific

- Need for greater national investments in S&T, including science education
- Persistent low profile of S&T as a tool for addressing local MDGs
- Water, environment, hygiene, energy education
- Uneven quality and “disconnectedness” of science education
- Declining interest of youth in pursuing science and engineering careers

“Mobilizing Science knowledge in Asia and the Pacific through Information and Communication Technologies”



COllaboration for Network-
eNabled Education, Culture,
Technology and science

- Indonesia Higher Education and Research Network (**INHERENT**)
- Malaysia Research and Education Network (**MYREN**)
- Philippines Research Education and Government Information Network (**PREGINET**)
- Canal ASEAN Virtual Institute of Science and Technology (**CanalAVIST**)
- Thai Inter University Network (**UniNET ThaiREN**)
- Sri Lanka Education and Research Network (**LEARN**)

- School on Internet Asia (**SOI**)
- Trans Eurasian Information Network (**TEIN**)

(GDLN and other networks)

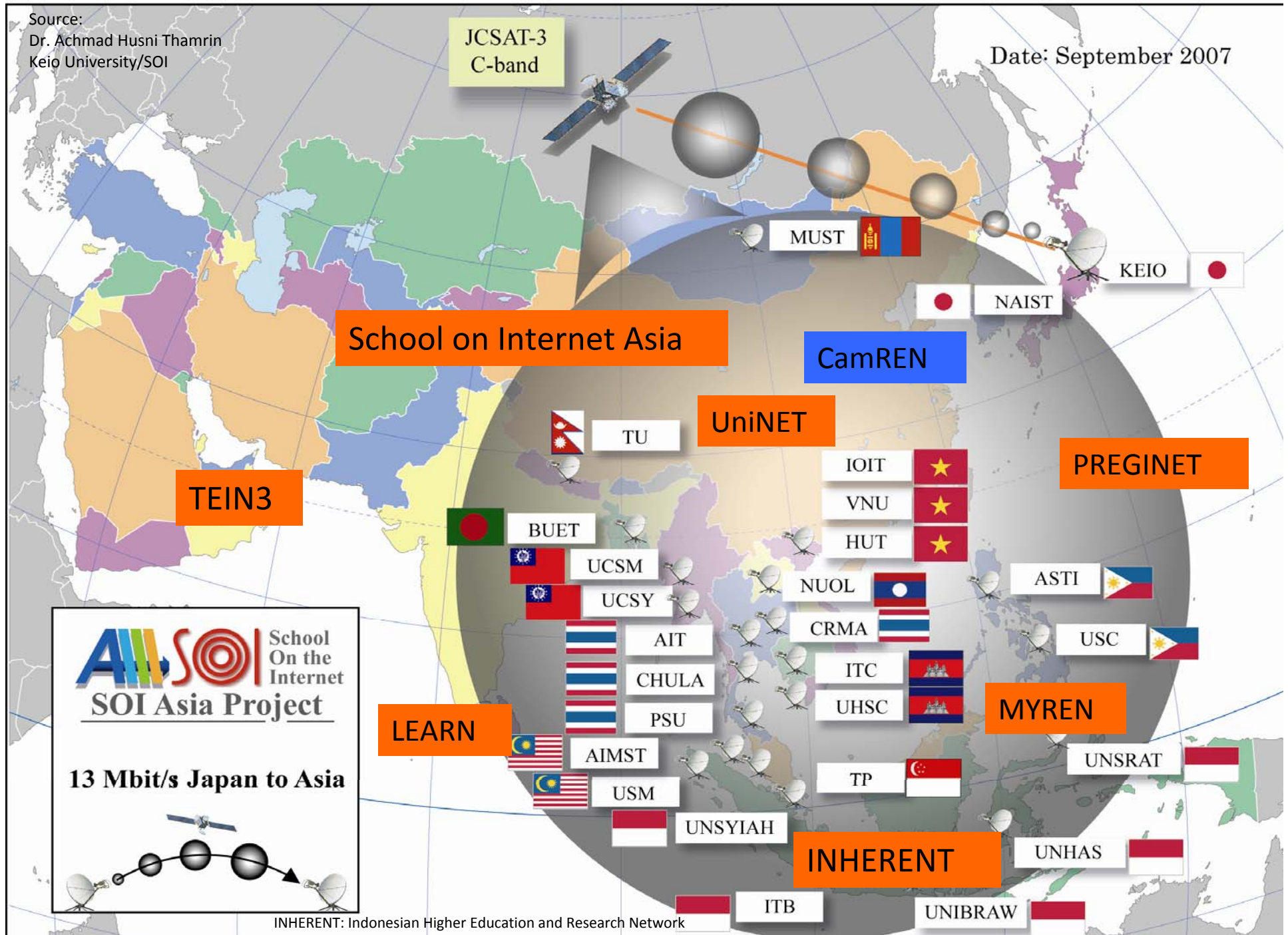
CONNECT - Asia shares values of Information and Communication Technologies.

CONNECT, as a group of national, sub-regional, and regional ICT networks, actively contributes to improvement of education and research in Asia and the Pacific.

NRENs :A **national research and education network (NREN)** is a national high-speed backbone intra-network, dedicated to supporting the **research** and **education** communities within a country.

Source:
Dr. Achmad Husni Thamrin
Keio University/SOI

Date: September 2007



JCSAT-3
C-band

School on Internet Asia

CamREN

TEIN3

UniNET

PREGINET

SOI Asia Project
School On the Internet
13 Mbit/s Japan to Asia

LEARN

MYREN

INHERENT

INHERENT: Indonesian Higher Education and Research Network

MUST

KEIO

NAIST

TU

IOIT
VNU
HUT

BUET

UCSM
UCSY

NUOL

ASTI

AIT
CHULA
PSU

CRMA
ITC
UHSC

USC

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USM

TP

UNSRAT

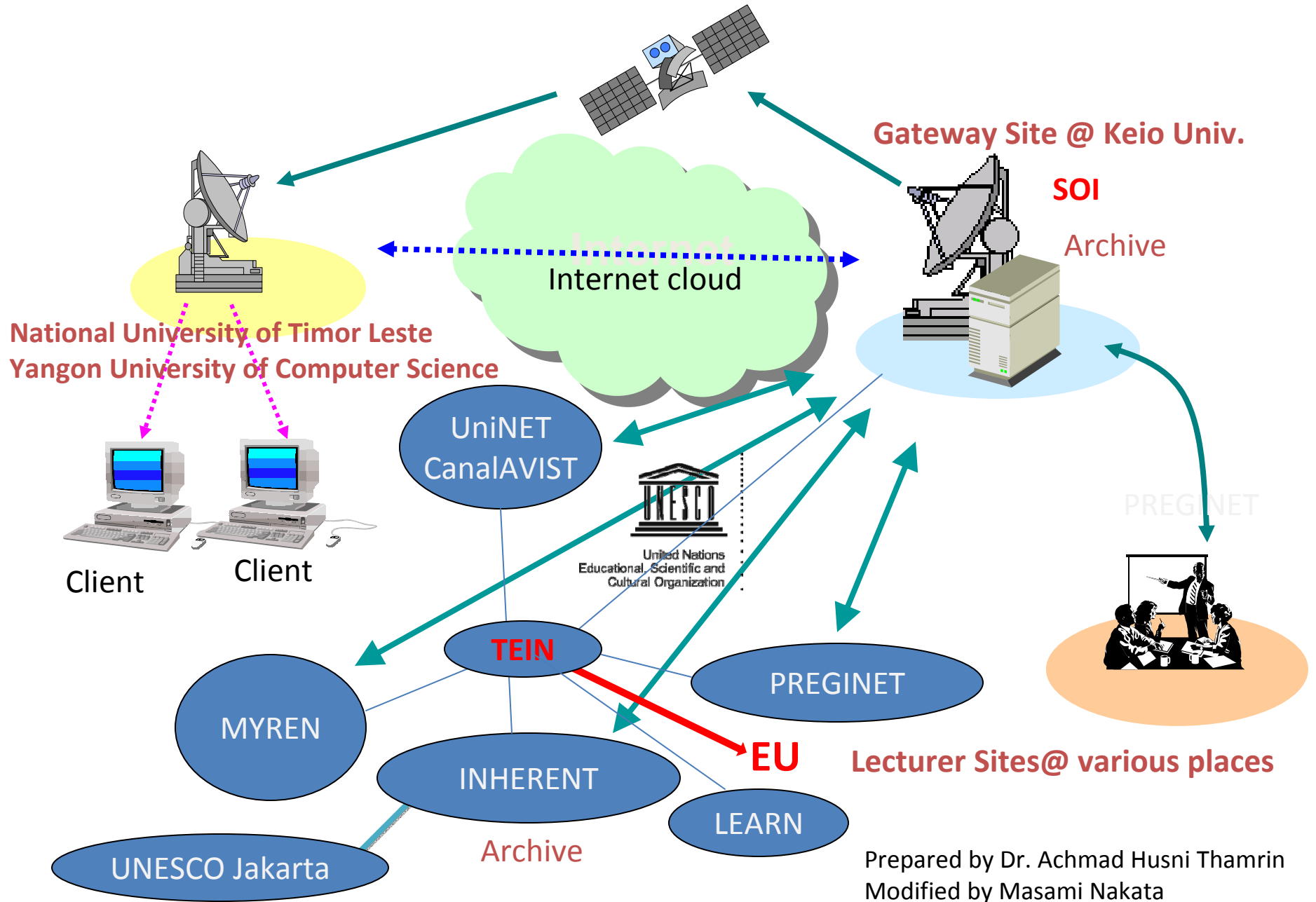
UNSYIAH

UNHAS

ITB

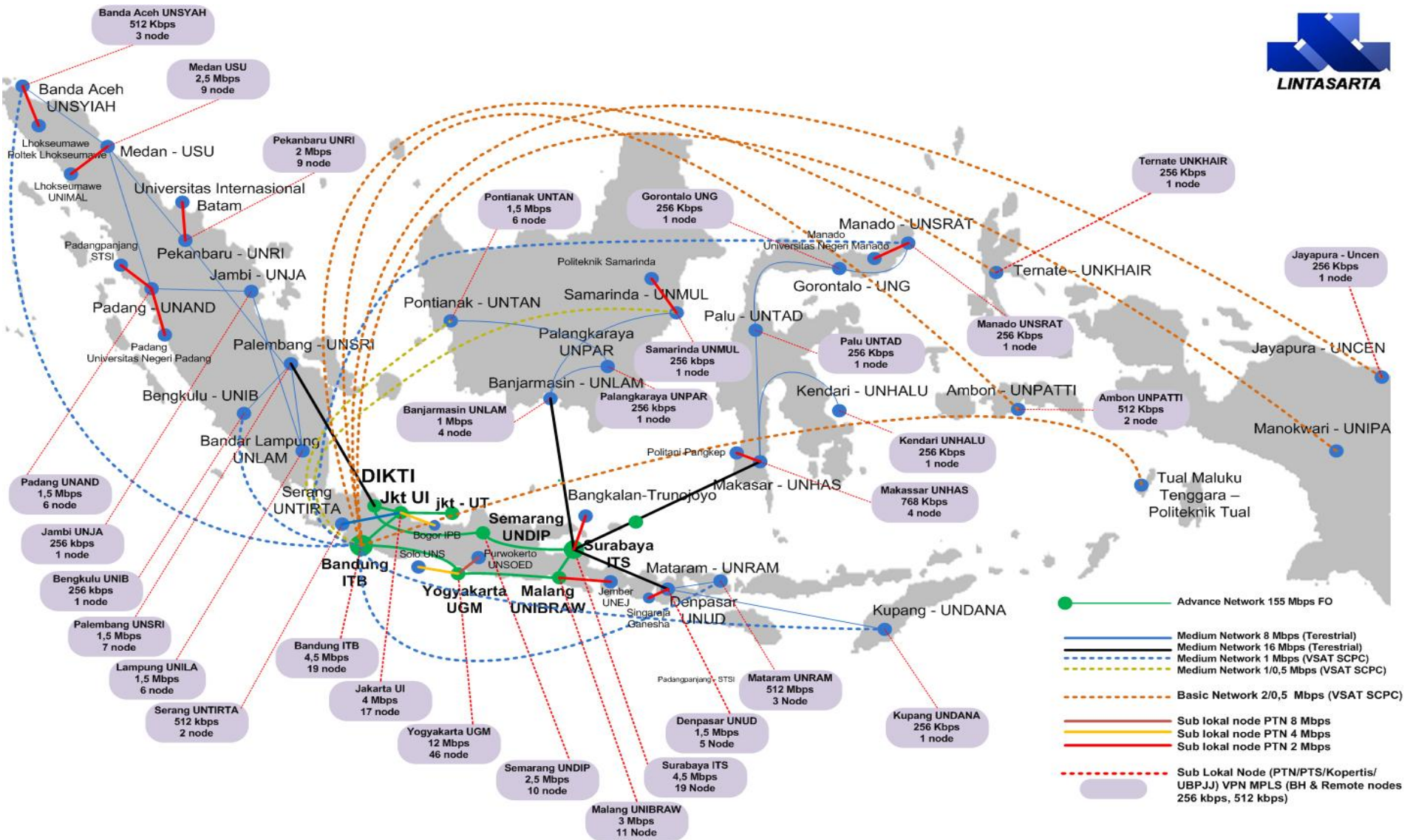
UNIBRAW

UNTL connection to CONNECT-Asia



Prepared by Dr. Achmad Husni Thamrin
Modified by Masami Nakata

Inherent 2009



Source: Prof. Basuki Suhardiman, ITB

UNESCO e-learning programme

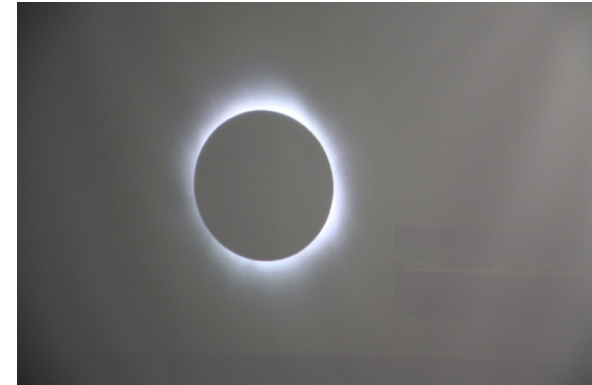


UNESCO e-learning programme





Solar Eclipse 22nd July 2009



CONNECT-Asia Brochure

Mobilizing Knowledge through Information and Communication Technologies (ICT)

There is great diversity among the countries in Asia and the Pacific in terms of economic development, human resources, and information technology capability. While the region includes both industrialized and rapidly industrializing countries, it also covers some of the least developed countries in the world. Therefore, there is a wide range of opportunities and resources from which countries could draw lessons and create mutual learning.

UNESCO Jakarta works with information and communication resources to develop human resources in Asia and the Pacific, particularly in science and technology. One e-learning

Collaboration with CONNECT-Asia

www.connect-asia.org

CONNECT-Asia (Collaboration for Network-Enabled Education, Culture, Technology and Science) was created in late 2006 to draw experiences of information and communication technologies and work together for education and research.

We work to create an effective and flexible mechanism for linking ICT-mediated educational systems and network-enabled teaching and learning methods. This is aimed at broadening and enhancing people's access to knowledge and information, sharing expertise and experience, improving connectivity among educators and researchers, opening up national higher education and research communities to the international arena, and further developing human resources. CONNECT, as a group of national, sub-regional, and regional ICT networks, actively contributes to the improvement of education and research in Asia and the Pacific.



© ITC Japan Meeting in Bali

Collaboration with SOI Asia and INHERENT

UNESCO formally established partnerships with SOI (Council on Internet Asia Project) and INHERENT (Indonesian Higher Education and Research Network) in signing Memoranda of Understanding with the University in 2006 and 06/11/2008.



© AICDC with SOI



© AICDC with INHERENT

UNESCO e-Learning Course

Renewable Energy Technology and Policy

Renewable energy is seen as an integral component of energy policy and over the world. We need to be fully aware of the issues involved in the use of renewable energy resources to ensure their sustainable, optimal and sustainable development.

UNESCO works with a network of universities and research institutions to develop human resources geared towards energy education and information sharing, aimed at raising public awareness and addressing developmental goals. Through these e-learning hubs, we introduce a discussion forum where traditional and technological knowledge on renewable energy can be shared and studied.

Renewable Energy Policy & Planning for Sustainable Development

March 2007 - November 2007



© UNESCO

Topics covered:

- The role of renewable energy and energy efficiency as important energy resources
- Current information management (CI) development
- Barriers inhibiting RE and CI promotion
- Best practices and case studies in RE development
- Policy, planning, research and energy efficiency, and their implications
- Modeling aspects of renewable energy development and policies

UNESCO e-Learning Course

Solar Solutions for Energy-Weak Communities in Asia

January 2007



© UNESCO

Topics covered:

- Join a energy solar photovoltaic and solar thermal
- Design of PV systems and case studies of PV systems
- Financing mechanisms; Solar solutions for poverty alleviation
- Sustainability of the solar energy market

Bio-energy for Achieving the MDGs in Asia

May - July 2007

Topics covered:

- Bio-energy: R&D and global sustainability
- Business resources potential and estimation techniques
- Business of biomass conversion and grassroot technologies
- Conversion technologies for biomass
- Classical analysis of renewable energy projects
- Financing mechanisms for renewable energy
- Development of non-bio-economic issues in bioenergy development
- Powering rural poverty alleviation with renewable energy
- Planning rural poverty alleviation with renewable energy

EI (Energy, Economy and Environment) Self-Sustainable Eco-village concept

UNESCO is supporting Prof. Kenjiro Yamada's Eco-village concept in this project. This is based on the 3rd concept, which also contributes to the sustainable development of rural communities in terms of (a) sustainable use of energy (energy), (b) development of local economies and income generation (economy), with (c) minimum negative environmental consequence (environment).

Topics covered:

- Self-village concept
- Renewable energy sources for Small Processing Units (SPUs)
- Design and environmental benefits of SPUs
- Geo-house design for Self-village

HI/AIDS Prevention Education

April - June 2007

This course was developed and organized in collaboration with the Faculty of Public Health of the University of Indonesia.

Topics covered:

- Basic information on HI/AIDS
- Factors of the current HI/AIDS situation
- HI/AIDS prevention
- Economic and psycho-social impact of HI/AIDS
- Prevention and issues on HI/AIDS: Religion, Gender, and Human Rights

Capacity Building for University-Industry Collaboration and Technology Transfer

July - August 2007

This course provides useful practical knowledge to university technology managers, government policymakers, researchers and students to build capacity for mutually beneficial university-industry partnership development and effective performance indicators in education and research.

Topics covered:

- Good practices and success stories on how to develop university-industry partnerships
- Drafting agreements with industry
- Successful negotiation skills
- Technology evaluation and valuation
- How to maintain the partnership
- Setting up Technology Transfer Offices and Business Incubation Centers

STI Policy e-Forum

Science, Technology and Innovation for Development in Asia: A Platform for Information Sharing and Learning



UNESCO Jakarta has initiated an e-forum on science, technology and innovation (STI) policy issues (<http://www.unesco.org/forum>) where government policymakers, researchers and students, and development workers from NGOs and networks, as well as other interested parties, can contribute to an international exchange of views on specific policy matters such as: STI human resources development and financing of STI, gender issues, STI human resources development and financing of STI, and patent issues and intellectual property to expand the base of training resources available to STI students and policymakers, especially for developing countries.

<http://e-learning.dikt.go.id/unesco/>

Sharing of knowledge and expertise through technology

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www.unesco.org/indonesia

SOI Asia

8th Asia Internet Asia

The 22nd ASIA Project utilizes results-based Internet to provide Internet environments in a fast, regularly, more easily deployed and flexible way for universities located in parts of the region where Internet environments are insufficiently developed. It also conducts research and development into the necessary technology for IT human resource development in Asia while using these environments and processes through field experiments. It is an educational methodology for universities in Japan as well as educational institutions abroad. At its December 2006 site project has on reliability and research findings partners in 10 countries in Asia and has deployed facilities available earth stations at each partner sites to share the distribution of the Internet. There appears as well as activated Internet.



© SOI Asia Project
12th November 2006

INHERENT

The Indonesian Higher Education and Research Network

INHERENT - the Indonesian Higher Education Network - is the main backbone connecting higher education institutions in Indonesia. Established in 2006, the network now connects an increasing number of sites through international and local links, each with a bandwidth of 100 Mbps. The main objective of the network is to promote resource sharing and collaboration among these institutions, which in turn will improve the quality of higher education in Indonesia and facilitate national programs for information sharing such as digital journal database subscription, national e-content development, telelearning, research collaboration, and computing, data information sharing, e-learning, etc. The Government of Indonesia, through the Directorate General of Higher Education, provides special funding to support learning activities on the network. In December 2007 the network migrated to SOI Asia Pacific, becoming the largest in-country affiliate of the Global Development Learning Network, which comprises more than 100 countries.



© INHERENT Higher Education Network

PREGINET

Philippine Research, Education, and Government Information Network

PREGINET is a nationwide broadband research and education network. It is the first government-led initiative to establish a National Research and Education Network (NREN) in the country. Establishing exchange points allow border network connectivity by enabling direct interconnectivity among users. Since the NREN is solely used by institutions that are part of the network, apparent advantages include reduced costs compared to ISP, increased bandwidth, and high bandwidth. These features enhanced knowledge sharing and research collaboration while the research and education community. PREGINET interconnects government, academic, and research institutions for collaboration research and education activities. PREGINET has well-organized partners as per Asia 2006. It links to APAN, AIC, TIS, and SOI.



MYREN

Malaysia Research And Education Network

MYREN is Malaysia Research and Education Network, used by academic and research institutions for collaborative research. It is linked to international research communities in the Asia-Pacific region, Europe and North America via the Trans-Eurasia Information Network (TEIN3). MYREN currently connects 10 universities and research institutions in eight states in both the West and East of Malaysia, via a combination of backbone and access capacity. With more bandwidth-intensive applications and greater user demand, it is envisaged that MYREN will evolve from its current single backbone to a larger scale network in the next phases, with more members joining and supporting various applications and services. The researchers are running various applications such as files, conferencing, digital video transport system (DVTS), data compression, distributed image rendering and e-learning. Therefore, it is important for MYREN to continue to deliver the quality performance required by research communities.



UNINET

University Network

UNINET provides a high speed information network links to 200 universities, institutes and campuses of around Thailand, in addition, it also provides network services in foreign countries such as Singapore, Tibet and Hong Kong enables Thai universities and institutes to manage virtual classrooms with their counterparts abroad. This project has enhanced Thai education, making it comparable to that of other countries.

UNINET Service:

- High speed network for higher education
- Self-learning course and distance learning resources on the Thai Library Integrated System
- Distance learning through the Thai Global Media Network Classroom
- Community of education and research networks in Thailand
- Human resources development in information technology



TEIN3

Trans-Eurasia Information Network

The third generation of the Trans-Eurasia Information Network (TEIN3) provides a dedicated high-capacity Internet network for research and education communities across the Asia-Pacific region. It directly connects and provides direct connectivity to European (GEANT) networks. This is the first Asia-Pacific connected to a global network, enabling over 20 million users across the region to participate in with their peers in Europe and other parts of the world.





UNESCO e-learning



Building a Green Society

This event is a collaborative effort of the CONNECT Asia initiative which was established in 2009. CONNECT-Asia (Collaboration for Network-eNabled Education, Culture, Technology and Science) was created in June 2009 and consists of national education research ICT networks (NREN) in Asia and beyond such as INHERENT (Indonesia) with 365 universities and research institutions, MYREN (Malaysia) with 82 institutions, PREGINET (Philippines) with 168 institutions, UNINET (Thailand) with 240 institutions, LEARN (Sri Lanka) with 30 institutions, SOI Asia (Japan) 28 universities and TEIN3 (Europe) delivering connections from GEANT in Europe for 45 million users in the region.

The "Building a Green Society" online seminar provides insights from Education, Culture, Science, and Communication sectors. We expect this activity to ignite collaboration and cooperation among the participating parties on sustainable development while also giving them the opportunity to share their own ideas, and to initiate the preparatory discussion in the region for Rio+20: United Nations Conference on Sustainable Development in 2012.

25 NOV 2011

The seminar will connect experts worldwide to share their vision on creating green societies. Participants from around the world will interact in this discussion centered in Asia through video conferencing from their own universities.

The Role of Education, Science, Culture, and Communication

ONLINE SEMINAR: 07:00 - 09:00 GMT / 14:00 - 16:00 Jakarta time



Opening:
Ms. Irina Bokova
Jakarta
UNESCO Director General



Keynote Speaker:
Prof. Jeffrey Sachs
New York
Towards a Green Economy



Moderator:
Ms. Desi Anwar
Jakarta



Prof. R. Martin Lees
Montpellier



& **Prof. Jun Murai**
Tokyo



Mr. Herbie Hancock
Los Angeles

& **Dr. Faridah Noor Mohd Noor**
Kuala Lumpur



Prof. Hans van Ginkel
Utrecht



& **Prof. Emil Salim**
Jakarta

Science: The Role of Science, Technology and Innovation in the Transition to a Green Economy

Culture: A Driver for Effective Sustainable Development

Education: Educating for a Sustainable Future

Hosted by Directorate of Higher Education, Ministry of Education and Culture, Indonesia

AGORAsia: Unlocking the Hidden Wonder of World Heritage

ONLINE WORKSHOP: to be announced

HOW TO JOIN



<http://connectivity.connect-asia.org>



CONNECTAsiaRENS www.facebook.com/connectivity.event

<http://connectivity.connect-asia.org>



“Unlocking the Hidden Wonder of World Heritage”

WHAT IS AGORASIA? AGORAsia is an online environment where university students, lecturers and other audiences gather to listen, discuss, create and share knowledge, from Asia to the world.

In this series of special workshops, specialists will promote discussions on theories from the heritages perspective, utilizing new learning approaches and making the best use of real time multilateral communication. As final assignment, students will create a video, to be submitted to the Video Contest*.

*VIDEO CONTEST

This video contest will stimulate junior high school to university students' creativity and reflection about world heritage utilizing new media tools. Participants will create short movies on the theme **MY World Heritage** – “For me, my world heritage is...”

The video can be of any genre: live action, animation, slide show, stop motion, etc. The video's length is up to 5 minutes or less and submission will be done by Youtube.

Prizes and certificates will be given to the author of best pieces.

SPECIAL WORKSHOP 1

Date : Monday, December 12, 2011
Time : 11:00 - 12:30 (Jakarta Time)
Featured Heritage : Borobudur Temple (Indonesia)
Featured Topic : Traditional and Digital Preservation Engineering*

SPECIAL WORKSHOP 2

Date : January 2011
Featured Heritage : Hiraizumi (Japan)
Featured Topic : Wooden Architecture/ Engineering*
Potential Guest : Japanese traditional carpentry professionals

SPECIAL WORKSHOP 3

Date : February 2012
Featured Heritage : Melaka and George Town (Malaysia), Ayutthaya (Thailand)
Featured Topic : Environment and Sustainability Management in Urban Areas*
Potential Guest : urban planners, environment engineers

SPECIAL WORKSHOP 4*

Date : March 2012
Featured Topic : Screening of video contest winners
Potential Guest : video makers, UNESCO

*tentative

For more information contact **Masami Nakata / Alia Febriana**
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<http://connectivity.connect-asia.org/>



INHERENT DIKTI
Indonesian Higher Education Network





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