

Asi@Connect (TEIN)

Connecting People, Network and Technology

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Bangkok, Thailand

27 November 2018



TEIN* Cooperation Center

What Is Asi@Connect?

Asi@Connect provides a dedicated regional high capacity and high quality Internet network, Trans Eurasia Information Network (TEIN), for research and education communities across Asia-Pacific and Europe, and leverage the e-infrastructure developed for public service projects.

❖ **Asi@Connect Project (ACA 2016/376-562)**

- has finally been signed on 21 December 2016 between the EC and TEIN*CC
- Implementation of the Action shall begin: on 1st September 2016.(60 months.)

❖ **Financing the Action**

- The total eligible costs: EUR 36,549,126.
- EC finance a maximum of EUR 20,000,000, limited to 54.7% of the total eligible cost.

Asi@Connect

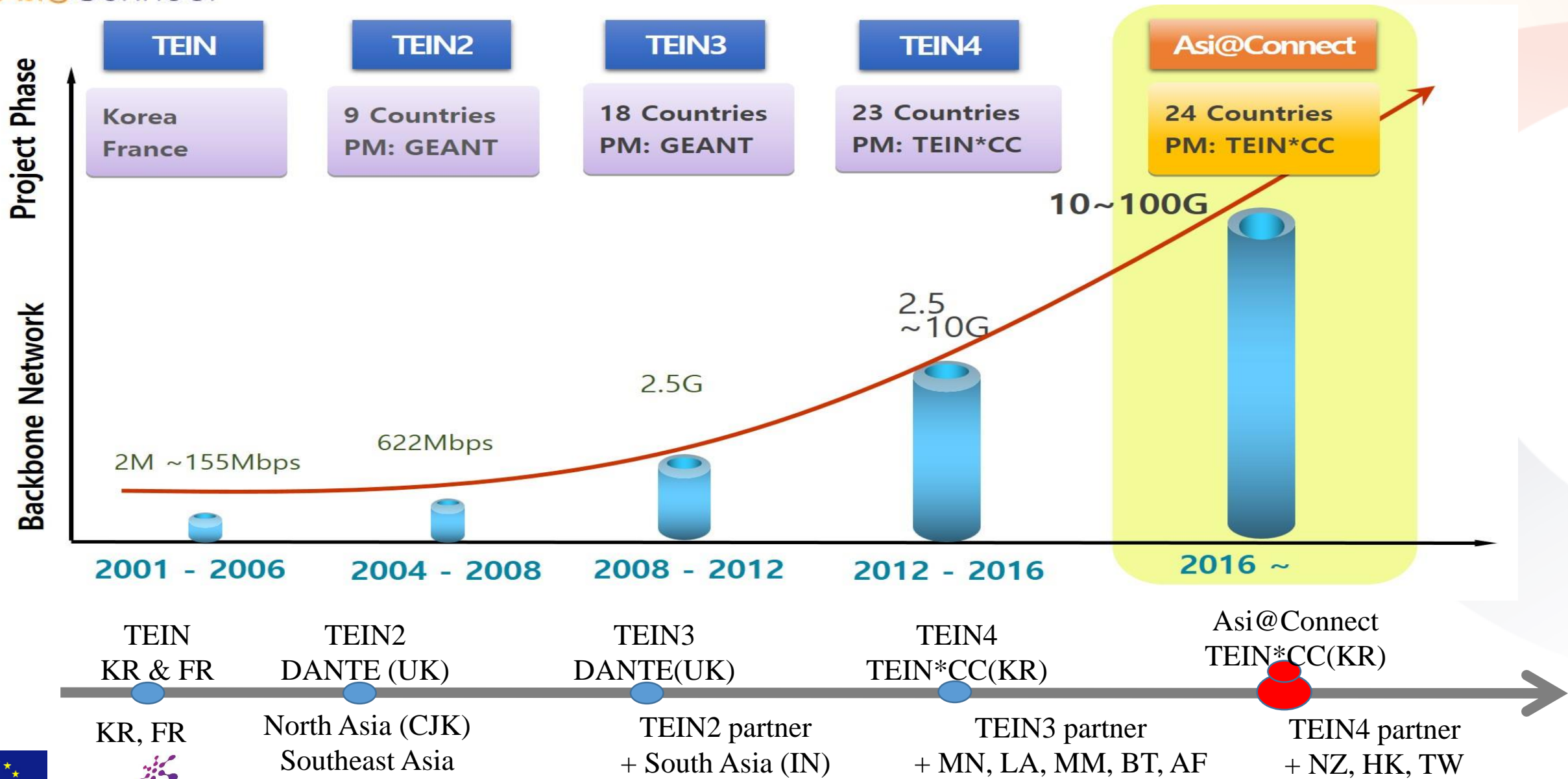
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This project is co-funded
by The European Union



This project is implemented
By TEIN*CC



 Afghanistan · Afghanistan Research and Education Network (AfgREN)	 Laos · Lao Education and Research Network (LERNET)
 Australia · Australia's Academic and Research Network (AARNET)	 Malaysia · Malaysian Research and Education Network (MYREN)
 Bangladesh · University Grants Commission (BdREN)	 Mongolia · ErdemNET (ErdemNet)
 Bhutan · Department of Information Technology and Telecom (DITT)	 Myanmar · Yangon University (Computer Science Dept. NREN) (mmREN)
 Cambodia · Institute of Technology of Cambodia (CamREN)	 Nepal · Nepal Research and Education Network (NREN)
 China · China Education and Research Network (CERNET) · China Science and Technology Network (CSTNET)	 New Zealand · Research and Education Advanced network New Zealand (REANNZ)
 Hong Kong · The Hong Kong Academic and Research NETWORK (HARNET)	 Pakistan · Pakistan Education and Research Network (PERN)
 India · National Knowledge Network (NKN)	 Phillippines · Advanced Science and Technology Institute (ASTI)
 Indonesia · Institut Teknologi Bandung (ITB)	 Singapore · Singapore Advanced Research & Education Network (SingAREN)
 Japan · National Institute of Information and Communications (MAFFIN) · National Institute of Informatics (NICT) · Ministry of Agriculture, Forestry and Fisheries Research Network (NII)	 Sri Lanka · Lanka Education and Research Network (LEARN)
 Korea · National Information Society Agency (NIA)	 Taiwan · Academia Sinica Grid Computing (ASGC)
	 Thailand · Thailand Research Education Network Association (ThaiREN)
	 Vietnam · National Agency for Science and Technology Information (NASATI)

TEIN Map



The following links are fully financed/co-financed by the link owners whose support is gratefully acknowledged

A National Institute of Information and Communications, Japan	I ORCA Center for Earth and EU
B National Institute of Information and Communications, Japan	J Academia Sinica Grid Computing, Republic of Chinese Taipei
C National Institute of Information and Communications, Japan	K Academia Sinica Grid Computing, Republic of Chinese Taipei
D National Institute of Information and Communications, Japan	L Research and Education Advanced Network New Zealand
E National Institute of Information and Communications, Japan	M Research and Education Advanced Network New Zealand
F Ministry of Agriculture, Forestry and Fisheries Research Network, Japan	N Lanka Education and Research Network, Sri Lanka
G National Institute of Information and Communications, Japan	O Advanced Science and Technology Institute, Thailand
H National Institute of Information and Communications, Japan	P National Knowledge Network, India
I National Institute of Information and Communications, Japan	Q Korea Research Environment Open Network, South Korea
J National Institute of Information and Communications, Japan	R National Institute of Information and Communications, Japan
K National Institute of Information and Communications, Japan	S National Institute of Information and Communications, Japan
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Asi@Connect Project Partners

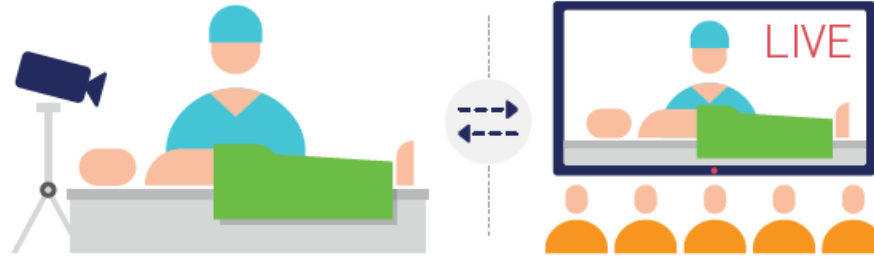
AF - Afghanistan Research and Education Network (AfREN)	LA - Laos Education and Research Network (LERNET)
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BO - University Grants Commission (BdREN)	MN - Mongolian Research and Education Network (ErdemNet)
BT - Department of Information Technology and Telecom (IDuKREN)	MM - University of Computer Studies Yangon (InmREN)
CP - Institute of Technology of Cambodia (CamREN)	NP - Nepal Research and Education Network (NREN)
CN - China Education and Research Network (CERNET) * CERNET connected to TEIN CN PoP at 10 Gbps China Science and Technology Network (CSTNET)	NZ - Research and Education Advanced Network New Zealand (REANZ)
HK - The Hong Kong Academic and Research Network (HARNET) The Hong Kong Open Exchange (HKOX) * HARNET and HKOX connected to TEIN HK PoP at 10 Gbps	PK - Pakistan Education and Research Network (PERN)
IN - National Knowledge Network (NKN) * NKN connected to TEIN IN PoP at 10 Gbps	PH - Advanced Science and Technology Institute (ASTI)
ID - Institut Teknologi Bandung (ITB)	SG - Singapore Advanced Research & Education Network (SingAREN) * SingAREN connected to TEIN SG PoP at 10 Gbps
JP - Ministry of Agriculture, Forestry and Fisheries Research Network (MAFFIN) National Institute of Information and Communications (NICT) National Institute of Informatics (NII)	LK - Lanka Education and Research Network (LEARN)
KR - National Information Society Agency (NIA) Korea Research Environment Open Network (KREONET)	TW - Academia Sinica Grid Computing (ASGC)
	TH - Thailand Research Education Network Association (ThaREN)
	VN - National Agency for Science and Technology Information (NASATI)

* As of October 2018. Ongoing updates

** Other regions (Central Asia, Africa and Latin America) can be connected via global R&E networks such as EUGÉANT and US|Internet2



Tele-medicine

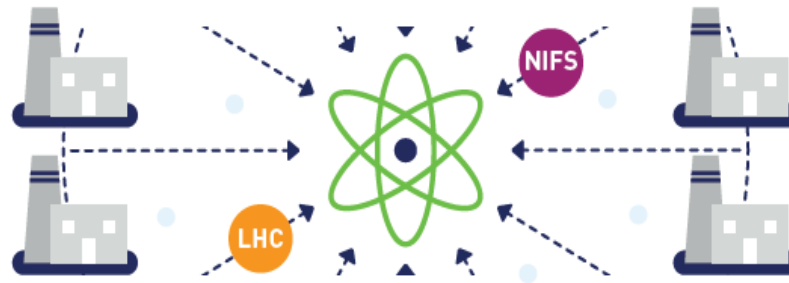


Medical doctors and experts share experiences and knowledge for epidemic disease prevention & better public health service.

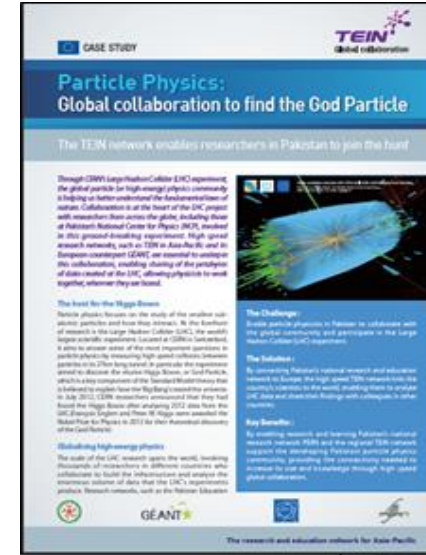
Asi@Connect provides high-quality network connectivity for supporting the live surgery and tele-surgical training.



e-Science



Researchers and institutions collaborate in a diverse range of subjects in natural science: Particle Physics such as Large Hadron Collider(LHC), Nuclear Fusion Science(NIFS), computational lenses, and grid computing.



'High Energy Physics'

Earth Observation



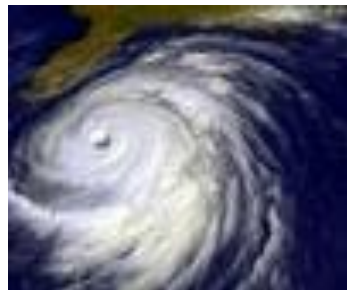
'Crop Research'



Asi@Connect allows the real-time data exchange through computing systems for the climate and weather prediction.

People in remote rural areas benefit from high resolution regional prediction systems providing faster and more accurate forecasts.

'Climate Research'



CASE STUDY

Predicting the Climate: Protecting lives, protecting livelihoods

TEIN network enables local climate prediction without the need for expensive computing resources on the ground.

The Trans-Eurasia Information Network (TEIN), a high-speed information network connecting scientists and researchers across Asia-Pacific, is transforming climate and weather predictions, especially in regions with poor technical infrastructure. TEIN is hosting a demonstration project to show how cloud computing makes it faster and cheaper to develop high-resolution regional climate prediction systems.

Predicting the climate is more important than ever. As the world shrinks under the impact of globalization, climate information is becoming an increasingly important element in social and economic decision-making.

Although the long-term impact of global warming on climate is still being debated, great volatility of climate and extreme weather events are problems in the present, and pose real threats to human security as well as that of billions of dollars of investment. In the past 20 years alone, there has been a severe drought in Indonesia (DRO), prolonged flooding in Thailand (DRO), and devastating typhoon Haiyan in the Philippines (DRO). Reducing the risks posed by these disasters is a matter of urgency – and we understand better than ever how to achieve this goal. It needs investment in climate prediction services to make them widely available to the governments and agencies affected, so they are benevolent and able to prepare.

TEIN – connecting users to the resources they need. TEIN's high-speed network – an essential part of a cloud computing solution – links researchers on the ground to huge computing resources – not all at one place. TEIN is facilitating collaborative demonstration projects to show how cloud computing can be used to develop and deliver high-resolution regional climate prediction systems – more quickly and more cheaply.

The Challenge:
To help provide accurate long-range climate and weather forecasts across Asia-Pacific, in regions where the technology infrastructure is poor.

The Solution:
Cloud computing solutions give researchers a powerful, self-supporting environment that is easily accessible and fully available – at any time and from any location.

Key Benefits:
TEIN brings all the social and economic advantages of sophisticated and powerful climate prediction to people who lack the resources. It provides an infrastructure for international collaboration on research into the many interrelated fundamental climate questions. And it acts as a conduit for knowledge and technology transfers that build climate science literacy across the globe.

Partners: Institut Teknologi Bandung, INHERENT, 京都大学

The research and education network for Asia-Pacific

CASE STUDY

SUPPORTING FOOD SECURITY

It is projected that the world's population will reach 9 billion by the middle of this century. Climate change will have a significant impact on food and livelihoods.

Climate prediction: the challenges

Decision makers, especially in developing countries, face two challenges: the accessibility of climate information, and its quality. High-quality climate prediction can be produced only through complex global climate simulation and the further processing of the output produced by these computer models. The technology is constantly improving in power and effectiveness, and it is now possible to produce global seasonal predictions up to six months ahead.

Some of the necessary infrastructure of truly global capacity is already in place. For example, the APEC Climate Center in Busan, Korea, collects and publishes global seasonal prediction information. But insufficient spatial information means that the output cannot be directly used for such applications as the early warning of typho-meteorological disasters, or for agricultural planning.

In order to make the information more useful, the predictions have to be downgraded into regional domains and the results further analyzed with impact modeling tools to provide estimates of local flood hazard levels, crop yields, energy production, and so on. Turning global climate simulations into useful assessments of the impact of particular events on local areas involves a huge amount of data processing, data transfer, and data mining, requiring substantial computer power and stable computer networks. There are wide gaps in this computing capacity between the developed countries and the advanced industrial countries; cloud computing is filling these gaps.

The speed and flexibility provided by TEIN allowed us our ability to perfect weather. Our short-range predictions include downgrading and processing of global data every day and we need simply write the code to do this without the need for expensive hardware.

My dream is to establish a regional center to predict the impact of weather and climate on social economics. It is to be a hub for construction and development.

Dr. Shinya Imai
Institute of Technology, Indonesia

Cloud computing: an already providing solution

Cloud computing is a well-established technology that allows sharing of information and resources across a network of servers. The TEIN network is the world's largest climate data archive and provides a secure and stable environment for global climate data. The Asian countries of Japan and the U.S. (JAXA and NASA) are collaborating in the collection of global weather data using satellites. Again, the available data they gather is being made available to researchers and policy makers across the world by virtue of cloud computing.

Cloud computing is already providing solutions

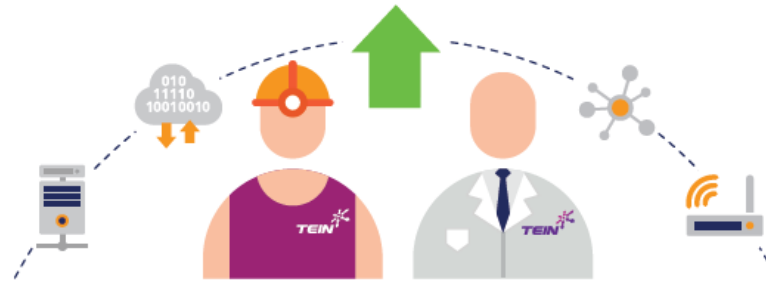
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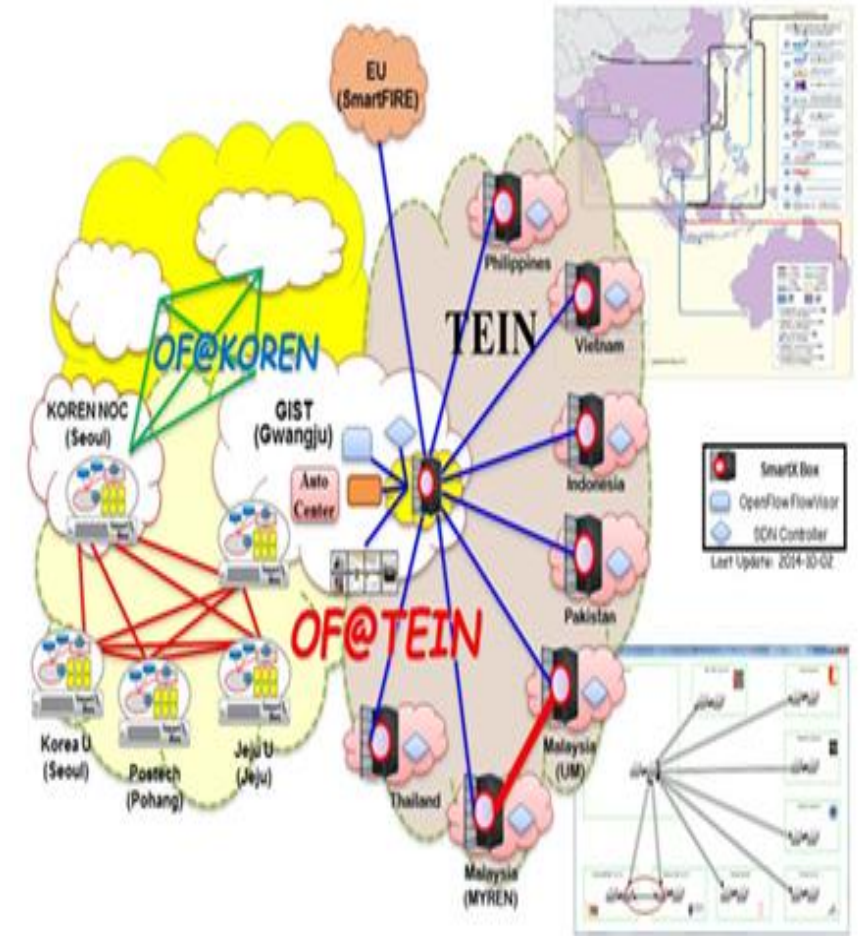
The research and education network for Asia-Pacific



Advanced ICT Technology



Asi@Connect supports researchers and engineers to develop and deliver innovative network technologies such as future internet that make networks more reliable, compatible and sustainable.



'Cyber Performance'

- Art Exchange
- Choreographed on traditional Malaysian movements & costumes
- Worked with NRENs on testing the link

TEIN*CC holds cyber performance linking Korea, Hong Kong and Vietnam

Updated: 2016-08-02 06:19:40 KST



- Performed traditional music for Hong Kong and Korea along with modern dance of Vietnam (APAN42, Aug. 2016)
- Tried to deliver multi channel sound effect through TEIN networks linking three countries



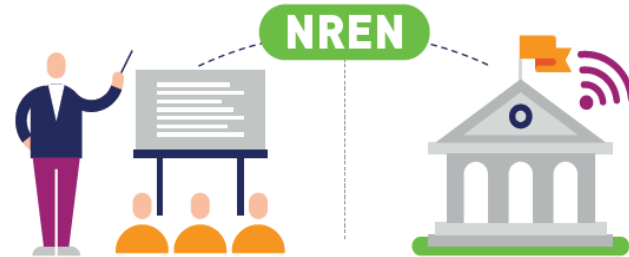
Capacity Building Program

Training Activities

Asi@Connect workshops and training programs helps NREN engineers and administrative staff for their capacity building.

Campus Network Design

Well-developed campus network infrastructure allows universities to connect to their National Research and Education Network(NREN) and to local Internet Exchange Points.



- Strengthen Capacity Building
- Deliver customized programs on network engineering and operations as well as applications and non-technical areas



- ❖ To raise awareness of launching Asi@Connect and continuation of TEIN initiative through the new project
 - Invite stake holders like as EU delegations, Government officers and funding bodies
 - Hold seminars targeting to NREN members and user group

Date	NREN (Country)
Feb. '17	NKN (India)
Jun. '17	LEARN(Sri Lanka)
Oct. '17	BdREN (Banladesh)
Dec. '17	ASTI (Philippine)
Nov. '18	ThaiREN(Thailand)



Asi@Connect provides high-quality, congestion-free network access to academic and research institutions worldwide. This connectivity is provided free of charge to all institutions connected to the LEARN network.

This is a good opportunity to bring up the Network Researchers, officials of Sri Lanka Government, delegates from the European Union, the Korean Government and the LEARN community (State universities and research and education institutes) to one stage.

Objectives of the Local Launch

- To announce to the policy makers, and R&E network community about the Asi@Connect project and how LEARN is involved in the same.
- To make the LEARN member institutions and researchers aware of the Asi@Connect project and its benefits.
- To make the researchers get involve and utilize the project resources and funds.

HOSTED BY
Lanka Education and Research Network
on 20th June, 2017
at Hilton, Colombo, Sri Lanka

REGISTER NOW at <http://www.learn.ac.lk/asiacconnect>



LEARN
Lanka Education and Research Network



Disclaimer: Asi@Connect is co-funded by the European Union under Grant contract ACA2016/376/562



Asi@Connect BANGLADESH LAUNCH EVENT 2017

Chief Guest
PROFESSOR DR. GAWHER RIZVI
National Affairs Adviser to the Prime Minister, GoB

Chairperson
PROFESSOR ABDUL MANNAN
Chairman, UGC

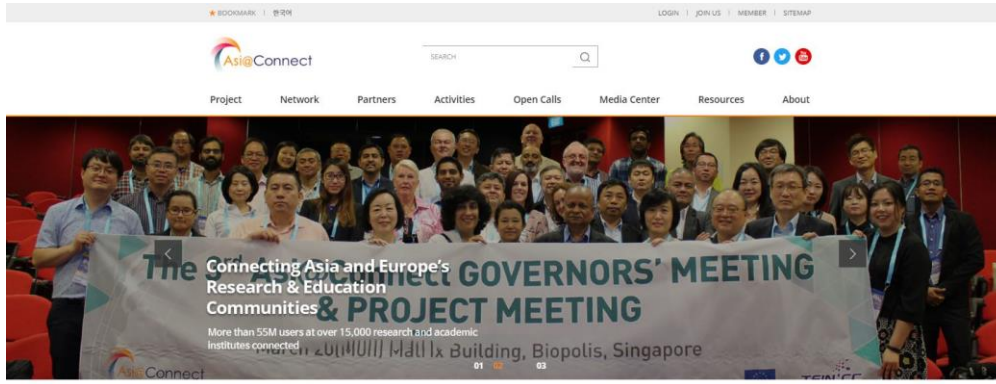
30 October 2017
SAMSON H CHOWDHURY CENTER / DHAKA CLUB LIMITED

“We had a very engaging session and our stakeholders are now aware of the project” – Roshan Ragel, CEO of LEARN (Sri Lanka)



Philippine Launch of Asi@Connect Network 2017
07 December 2017 | Novotel Manila Araneta Center, Quezon City

Logos: DDST-ASTI TRENTA 1987, European Union, TEIN, Asi@Connect, PREGINET



(Announcement) 1st survey for Asi@Connect partners
TEIN⁴CC conducts the 1st survey for Asi@Connect partners from 9 May to 15 June 2016. This survey...



TEIN⁴CC Newsletter #3 May 2018
TEIN⁴CC Newsletter #3 May 2018 (in EN) Download PDF *(MCSUBJECT)*–...



2017 Annual TEIN NOC Workshop
When: December 11 -15, 2017 Where: Islamabad, Pakistan The Annual TEIN NOC Workshop is a...



@AsiaConnectProject

Visibility & PR : Communication Platform



Editorial



On behalf of TEIN⁴CC, I would be pleased to publishing the First TEIN⁴CC Newsletter stepping with launching Asi@Connect project. TEIN⁴CC will publish this Newsletter for project development by enthusiastic and lively research activities. I hope that this Newsletter will be a starting point to the Global Networking.

During the TEIN⁴ project, we have achieved remarkable results by increasing backbone capacity with network traffic volume. In Asi@Connect phase, we have one of the main goals to develop more various joint



Asi@Connect Activities

The 3rd Asi@Connect Governors Meeting in Singapore, 26 March 2018

The Asi@Connect Governors and Project Meeting brings Asi@Connect partners, NREN managers and researchers across Asia-Pacific, and discuss and share idea for Asi@Connect project. The 3rd meeting was held in Singapore co-located with APAN45. Out of 24 Asi@Connect partners, 23 representatives were attended and there was productive discussion for year 2018 activities.

[Read more](#)



National Launch Event in Bangladesh (30 Oct 2017)

Research and education community in Bangladesh celebrated the national launch of Asi@Connect. BdREN, the national research and education network of Bangladesh, invited high-level officers of Bangladesh government, higher education commissions, academia and researchers. They shared BdREN's vision and possibility of global collaborations through Asi@Connect.



@AsiaConnectNews



ขอบคุณครับ

Thank you

www.tein.asia

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