

RESEARCH and EDUCATION NETWORKS in the GMS

by

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14 November, 2014

Some slides are from Dr.
B.K. Kim ,TEIN*CC
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GMS Network Based Collaborations

- AI3
- School on Internet SOI
- ASEAN Virtual Institute of Technology
- GMSVU (2001)

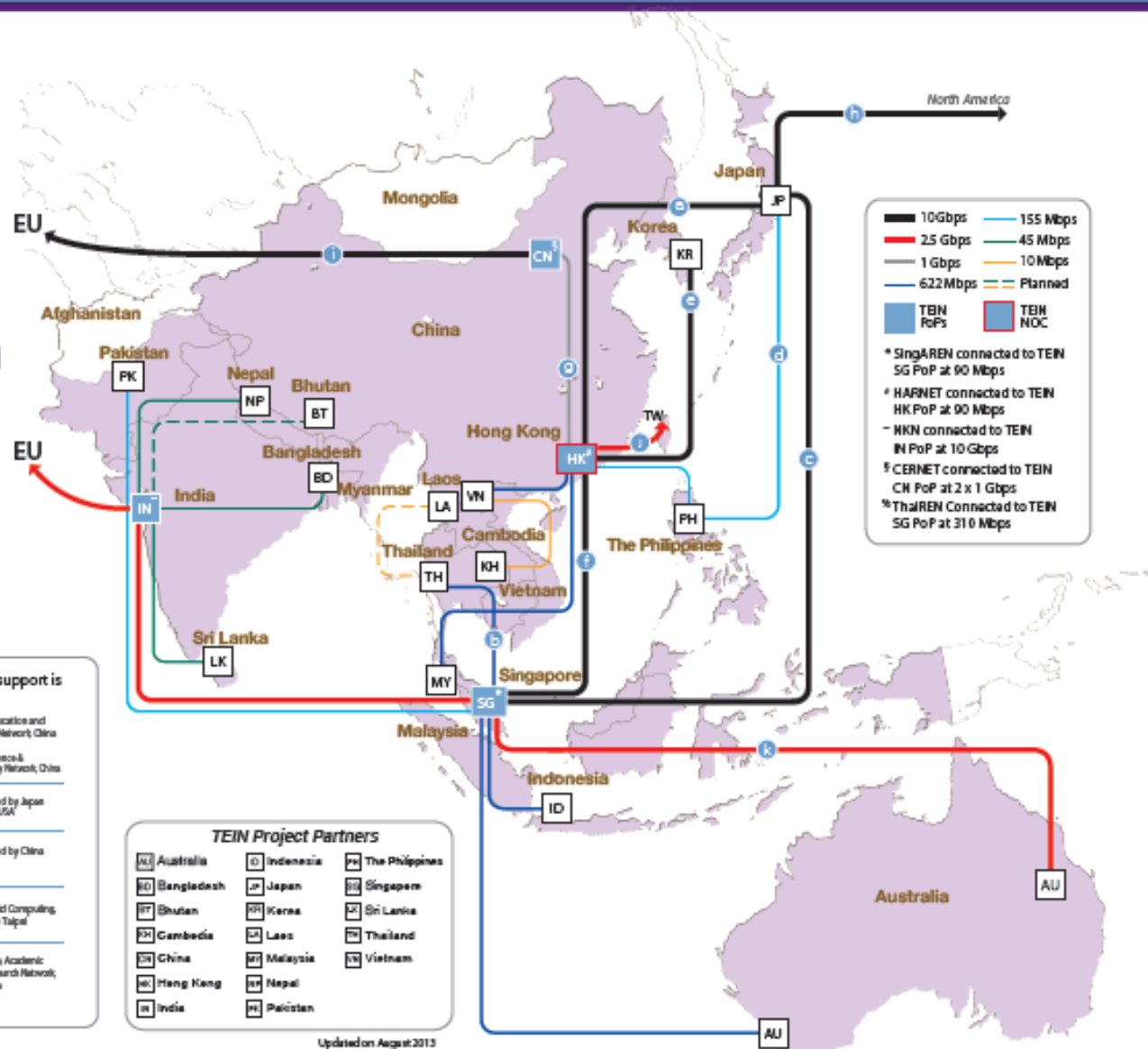
GMSVU Experiences

- Language
- Accessibility
- Affordability - wifi and tablets
- Self-learning vs Real-Time Classrooms
- How to sustain the collaborative efforts?

GMS R&E Networks



Connecting Asia and Europe's Research and Education Communities



The following links are fully financed by the link owners whose support is gratefully acknowledged.

<p>a National Institute of Information and Communications, Japan</p> <p>b National Institute of Information and Communications, Japan</p> <p>c National Institute of Informatics, Japan</p> <p>d Ministry of Agriculture, Forestry and Fisheries Research Network, Japan</p> <p>e National Information Society Agency, South Korea</p>	<p>g China Education and Research Network, China</p> <p>h co-funded by Japan and the USA</p> <p>i co-funded by China and EU</p> <p>j Academia Sinica Grid Computing, Republic of Chinese Taipei</p> <p>k Australia Academic and Research Network, Australia</p>
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TEIN is co-funded by the European Commission through the Directorate-General for Development and Cooperation-EuropeAid

www.tein.asia

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TEIN GMS members

(August 2014)



❑ Beneficiary (15 countries / economies)

- ❖ **Bangladesh** : University Grants Commission (UGC)
- ❖ **Bhutan** : Department of Information Technology and Telecom (DIT&T)
- ❖ **Cambodia** : Institute of Technology of Cambodia (ITC)
- ❖ **India** : National Knowledge Network (NKN)
- ❖ **Indonesia** : Institut Teknologi Bandung (ITB)/INHERENT
- ❖ **Laos** : Lao Education and Research Network (LERNet)
- ❖ **Malaysia** : Malaysian Research and Education Network (MYREN)
- ❖ **Nepal** : Nepal Research and Education Network (NREN)
- ❖ **Pakistan** : Pakistan Education and Research Network (PERN)
- ❖ **Philippines** : Advanced Science and Technology Institute (ASTI)
- ❖ **Sri Lanka** : Lanka Education and Research Network (LEARN)
- ❖ **Thailand** : Thailand Research Education Network Association (ThaiREN)
- ❖ **Vietnam** : National Agency for Science and Technology Information (NASATI)
- ❖ **Afghanistan (AfgREN), Myanmar (mmREN)**



❑ Non-Beneficiary (6 countries / economies)

- ❖ **Australia** : Australia, Academic and Research Network (AARNet)
- ❖ **China** : China Education and Research Network (CERNet),
China Science & Technology Network (CSTNet)
- ❖ **Hong Kong** : Hong Kong Academic and Research Network (HARNet)
- ❖ **Japan** : National Institute of Information and Communications (NICT),
National Institute of Informatics (NII),
Ministry of Agriculture, Forestry and Fisheries Research Network (MAFFIN)
- ❖ **Korea** : National Information Society Agency (NIA)
- ❖ **Singapore** : Singapore Advanced Research & Education Network (SingAREN)



2014-05-10

Further country National Research and Education Networks (NRENs) may join during the period of TEIN projects



TEIN4 Objectives

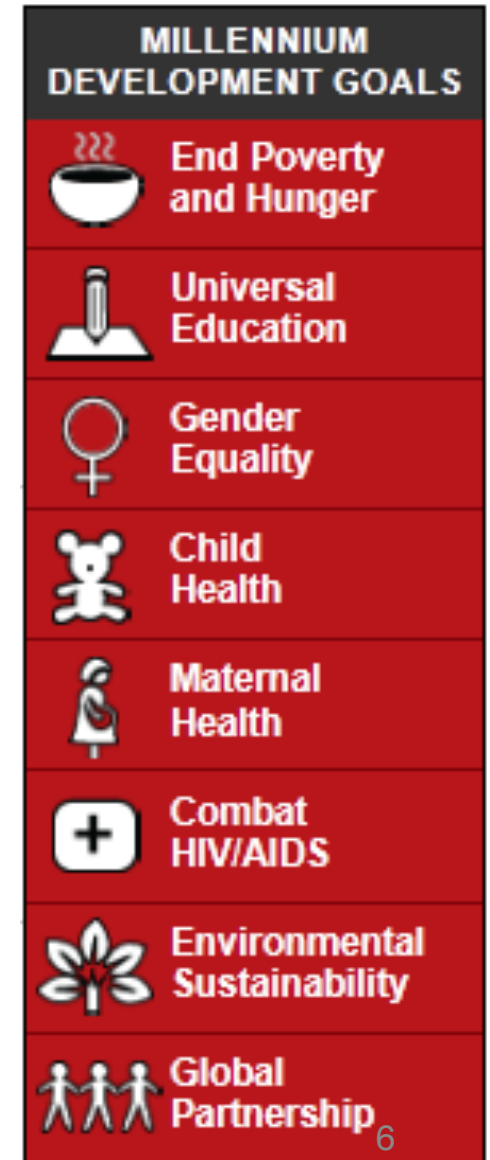


❑ Overall objective

To contribute to the MDGs (Millennium Development Goals) by establishing dedicated high-capacity internet links between Research and Education (R&E) organisations in the Asia-Pacific region and Europe, enabling and promoting collaborative research on applications of broad societal benefit.

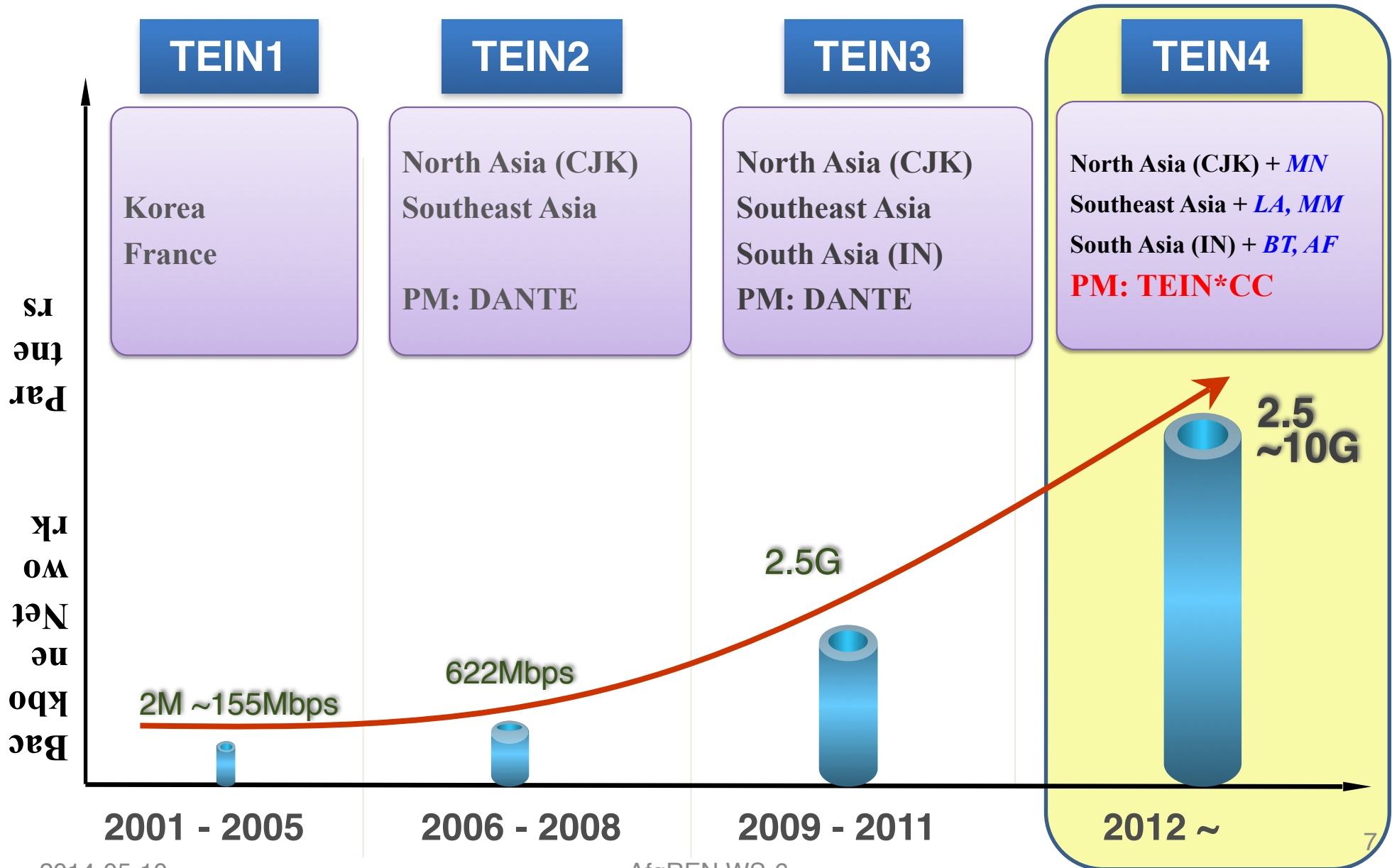
❑ Specific objectives

- ❖ To further develop dedicated high-speed internet links between national R&E organisations in Asia and connect them with Europe.
- ❖ To promote the broadening of MDG relevant user applications made available by the TEIN network, and increase the use of the TEIN network.
- ❖ To enhance human capacity of the TEIN beneficiary partners and promote international R&E collaboration between Asian and European partners.





TEIN Evolution

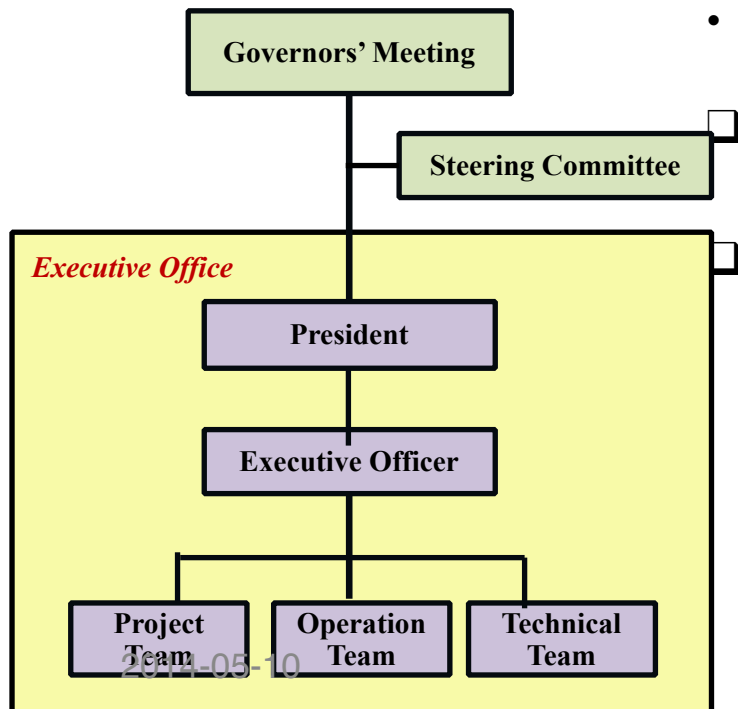




TEIN* Cooperation Center



- ❑ In the ASEM8 Summit in Brussels on October 2010, the Leaders endorsed TEIN4 and the establishment of the TEIN* Cooperation Center in its Chair's Statement.
- ❑ TEIN* Corporation Center(TEIN*CC) was established on August 2011 in Seoul, South Korea. It is a non-profit Foundation Corporation governed by the Korean Civil Act.
- ❑ Co-funding by the EC and NRENs, supported by Korean Government, and Seoul Metropolitan City
 - TEIN4 programme (16M Euro/48months) by the EC (50%) by NRENs (50%)
 - Operational costs by the Ministry of Science, ICT and Future Planning
 - Seoul Metropolitan City provides the TEIN*CC office and office facilities



❑ **TEIN4 contract (Grant Contract) signed between EC and TEIN*CC on April 2012 (48 months).**

❑ **1st Governors' Meeting and Opening Ceremony (May 2012)**





TEIN User Applications



TEIN success stories:

- Natural disaster warning and post-crisis support
- Crop research
- Tele-surgical training
- Medical tele-consultations
- Virtual lectures
- Global testbed for new technologies
- High Energy Physics Experiment
- e-Social Science

TEIN⁴
global collaboration

Global Testbed for New Technologies

TEIN provides the openflow-enabled SDN platform to international researchers for future internet

TEIN

Finding the God Particle

The TEIN network enables global collaboration among the particle physics research community to join the hunt for the Higgs Boson

Higgs boson production simulated with ATLAS data with color features from Physics of Higgs Boson, The HighEnergy Theory Group, University of Bonn, Germany. The HighEnergy Theory Group, University of Bonn, Germany.

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The research and education network for Asia-Pacific

TEIN

save

TEIN3 allows accurate typhoon forecast saving weather warnings through timely meteorological data from G...

The third generation of the Trans-Eurasia Information Network (TEIN3) is a dedicated high-capacity Internet for over 45 million academics in 18 countries across Europe, Asia and Africa.

2014-2016

DANTE

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the research and education network

TEIN

tackles world

TEIN3 helps get the right information to people to detect dangerous hotspots which will...

The third generation of the Trans-Eurasia Information Network (TEIN3) is a dedicated high-capacity Internet for over 45 million academics in 18 countries across Europe, Asia and Africa.

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the research and education network

TEIN

trains

TEIN3 allows surgeons at the complex clinical techniques through interactive...

The third generation of the Trans-Eurasia Information Network (TEIN3) is a dedicated high-capacity Internet for over 45 million academics in 18 countries across Europe, Asia and Africa.

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the research and education network

TEIN

TEIN fights hunger

TEIN3 helps farmers grow crops with greater yield and disease resistance by allowing researchers to develop new varieties and analyze conditions...

The third generation of the Trans-Eurasia Information Network (TEIN3) is a dedicated high-capacity Internet for over 45 million academics in 18 countries across Europe, Asia and Africa.

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the research and education network



Future Plans

- Next phase of TEIN (TEIN5) -



❑ Next phase of TEIN (TEIN5)

❖ Period: 2016~2020

❖ Total Budget: up to 20M supported by the EC (50% of the total amount, ~40M)

❖ Specific objective

✓ Provide and further develop a dedicated regional high capacity, high quality Internet connectivity network for research and higher education, also leveraging the e-infrastructure developed for public service projects.

❖ Expected Results

✓ Establish a dedicated regional Internet network of at least 10Gbps for use primarily by the universities and higher education institutions who are members of national research and education networks (NRENs) in Asia, connecting them with Europe and globally.

During the period, more related application programmes such as e-learning and e-government will be also supported within the budget.

TEIN and GMSSARN

- GMSVU
- Climate Change Research
- Natural Disaster Warning and Post-crisis support
- Telemed

THANK YOU