

Key Achievements of TEIN1

August 2006

1. Background

In March 2000, while on a 10-day tour of four European nations including France aimed at strengthening Seoul's economic ties with the EU, Kim Dae-Jung, then President of Korea proposed the interconnectivity between European and Asian research and education networks. European leaders pledged to support the idea at the upcoming ASEM in Seoul, Korea.

2. Brief History

2000

March 2 – 11, President of Korea visited Italy, Vatican, France and Germany and proposed the idea of Trans-Eurasia Information Network (TEIN). Informal agreement was reached on the proposal. October 19 – 21, Seoul, Korea, ASEM 3 endorsed TEIN as one of the new 16 ASEM Initiatives upon the co-proposal by Korea, Singapore and European Commission (EC)

2001

March 27 – 28, The 1st Expert Group Meeting (EGM) on TEIN was held in Seoul, Korea and reached agreement on a number of actions to implement TEIN Initiative



December 1, France-Korea link of 2Mbps was launched with the support of Korea and France

2002

March 1, France-Korea link was upgraded to 10Mbps in response to the increasing demand
March 25 – 26, The 2nd EGM was held in Brussels, Belgium and agreed on the future direction of TEIN such as common AUP (Acceptable Use Policy)



July 21, Studies proposal of TEIN expansion to Southeast Asia was made jointly by Indonesia, Malaysia, Philippines and Thailand

September 20, Meeting among EC, France and Korea was held to discuss the future development of TEIN in the context of ASEM4

September 22 – 24, ASEM4, Copenhagen, Denmark stressed the significance of TEIN

October 21, The 1st meeting between Malaysia and Korea in Kuala Lumpur, Malaysia and discussed how to extend TEIN to Southeast Asian region

November 27, The 2nd meeting between Korea and Malaysia in Seoul, Korea and discussed how to establish the intra-Southeast Asian regional network

2003

January 8 – 10, TEIN was officially introduced for Southeast Asian countries at the 13th e-ASEAN Working Group, Hanoi, Vietnam and received gratitude

May 7, In Kuala Lumpur, Malaysia, the 3rd meeting between Malaysia and Korea together with EU delegation in Malaysia and discussed the future funding plan of EC and Asia

August 25 – 26, TEIN/APII/KOREN Symposium was held on the occasion of APAN 16, Busan, Korea and discussed the growing need for inter-regional collaboration between Asia and Europe

September 13 – 15, EU Commissioner Erkki Liikanen visited Seoul, Korea and announced a TEIN plan of 10 million euro investment

September 14 – 17, TEIN was also introduced by Korea for further cooperation between Northeast and Southeast Asian countries at the 4th ASEAN+3 TELSOM Working Group, Singapore

November 1, France-Korea link was upgraded to 34Mbps in response to the increasing demand

3. ASEM Activities

ASEM 3

ASEM 3 was held on October 20-21, 2000 at the COEX Center near the World Trade Center in Seoul., Korea, under the theme of “Partnership for Prosperity and Stability in the New Millennium.” In the meeting, TEIN, jointly proposed by Korea, Singapore and the European Commission, was endorsed as one of the new 16 ASEM Initiatives. ASEM Leaders recognized the importance of cooperation in the areas of information and communications technology.



ASEM 4

ASEM 4 was held on September 22-24, 2002 at the Bella Center in Copenhagen, Denmark. The establishment of the TEIN and Trans-Eurasia Railroad has led to a comprehensive evaluation to

increase cooperation in the two regions. Then President Kim Dae-Jung gave a speech on September 23, 2002 at the opening ceremony of ASEM 4. He focused on the "Digital Silk Road", Trans-Eurasia Information Network realized between Korea and France as a giant step toward the formation of Eurasian cooperative community, while highlighting the reconnection work on inter-Korean railways, promising to be an "Iron Silk Road" that will eventually run Eurasian continent.



ASEM 5

At the ASEM 5, October 8-9, 2004, Hanoi, Vietnam, TEIN provides the rationale for ASEM cooperation in the applications of ICT in human resource development and capacity building.

4. ASEAN Activities

At the 13th e-ASEAN Working Group (EAWG), January 8-10, 2003, Hanoi, Vietnam, TEIN was formally introduced by Korea for cooperation with Southeast Asian countries. ASEAN countries expressed their appreciation for the future expansion of TEIN into their region.

At the 4th ASEAN+3 TELSOM Working Group, September 14-17, 2003, Singapore, TEIN was also introduced by Korea for further cooperation between Northeast and Southeast Asian countries.

5. APEC Activities

Ranging broadly from APEC Telecommunications Working Group to APEC Ministerial Meeting, TEIN is regularly reported and discussed as one of APII related agenda.

6. France-Korea Link

First Launch

On December 5, 2001, France (RENATER) and Korea (KISDI) forged a Korea-France link of TEIN, by directly connecting the Korea advanced Research Network (KOREN) in Korea and RENATER in France. TEIN was first implemented with a bandwidth capacity of 2 Mbps SCR and 4 Mbps PCR based on the Asynchronous Transfer Mode (ATM) method. France and Korea also agreed to increase the bandwidth up to 34 Mbps, on demand. The demand for network capacity was strong from the beginning.

Three-Phase Upgrade

In response to increasing demand from both Europe and Asia, the KR-FR link was gradually upgraded three times to 10Mbps, 34Mbps and 155Mbps, respectively.



7. International Research Collaboration

TEIN, together with GEANT, APII and so on, contributed to more effective research collaborations between Europe and Asia, variously ranging from IPv6 to High Energy Physics. KISDI has selected and supported several working groups with multiple participants according to advanced research categories, in parallel with international joint projects led by specific individuals since 2004.

8. Evolution into TEIN2

TEIN EGM2

Following the 1st Expert Group Meeting (EGM) on

TEIN in March 2001, Seoul, the 2nd EGM was held on March 25-26, 2002 in Brussels. 55 government officials and experts from ASEM partners, research institutes, and international network organisations have participated in this meeting, which was co-organised by the European Commission, GIP RENATER and Korea Information Society Development Institute (KISDI). While the EGM1 focused on how to implement TEIN Initiative, EGM2 concentrated on expanding the intra-Asia connectivity to the ASEAN region.



European Commissioner's Visit to Korea

In September 2003, Erkki Liikanen, European Commissioner for Enterprise and Information Society, announced during his three-day official visit to Korea that the EU would invest 10 million euros in the TEIN project. The announcement was made during a press conference at the Lotte Hotel, in downtown Seoul. He showed a strong interest in the nation's high-tech sector, ranging from electronics to the game industry to broadband infrastructures.

TEIN2 Information Day

Following numerous consultations, recommendations and agreements made in relevant fora on TEIN which involve ASEM members during the years 2002 and 2003, the European Commission decided on November 26, 2003 to co-finance with up to 10 million euros the TEIN2 Action in support of the goals and objectives of the TEIN ASEM initiative. In this context, in order to present the modalities of the TEIN2 Action, the European Commission invited the main stakeholders in TEIN to attend a TEIN2 Information Day on January 14, 2004, in Brussels.



TEIN Seminar & the 1st TEIN2 Technical Committee

To disseminate information on the existing TEIN infrastructure, the upgrades for TEIN and the plans for TEIN2 as well as on research conducted by TEIN partners utilizing the TEIN infrastructure, TEIN

Seminar was held in Kuala Lumpur, May 20, 2004, one day before the 1st TEIN2 Technical Committee. Composed of the representatives of TEIN2 ASEM partners, the TEIN2 Technical Committee started its activities by discussing the progress of the TEIN2 feasibility study.

About KISDI

Established in 1985, Korea Information Society Development Institute (KISDI) is a leading think-tank and a government research institute for policy development of the ICT sector in Korea. One of the main objectives of KISDI is to provide new visions and policy recommendations on information and communications-related issues to the Ministry of Information and Communication (MIC) as well as other governmental agencies of Korea. Policies generated by KISDI, in such areas as informatization of the society, the information technology (IT) industry, telecommunications market competition and regulatory measures, telecommunications and broadcasting convergence, as well as postal services support the Korean government's efforts to build an information society for the 21st century.

KISDI actively supports the continued efforts in the establishment of a global information society and in bridging the digital divide across national boundaries. Also by joining efforts with the various activities undertaken by the APII Cooperation Center, KISDI plays a major role in international fora such as APEC, ASEAN, ITU, and the World Bank.

Contact Point

Hang Ryeol Na, Senior Researcher
APII Cooperation Center, International IT Cooperation Division, KISDI
john@kisdi.re.kr

References

1. FRANCE-CORÉE ACTUALITÉS - Les News de la presse électronique

http://assoc.wanadoo.fr/france-coree/actu/actu_news.htm#network

PARIS - La France et la Corée d'accord pour la création d'une super autoroute de l'information entre l'Europe et l'Asie : 7/3/2000 - Le Président KIM Dae-jung et le Président CHIRAC sont tombés d'accord sur le principe de la construction d'un réseau au cours de la rencontre au sommet qu'ils ont tenu à l'occasion de la visite d'État du Président Coréen en France. CHIRAC a particulièrement bien accueilli la proposition de KIM d'interconnecter les économies européennes et asiatiques au moyen d'un "e-network" . Les deux leaders considèrent que le lancement du Réseau Trans Eurasie devra être mis au rang des priorités à traiter à l'occasion de la 3ème Conférence Asie-Europe (ASEM) qui doit se tenir à Séoul en Octobre prochain...

Concernant le projet de Réseau électronique Trans-Eurasien, le chef du cabinet économique du président coréen, LEE Ki-ho a souligné qu'il s'agissait "d'une partie du *Projet Mondial pour le Millénaire* du Président KIM Dae-jung, lequel devrait apporter prospérité et bien-être dans les deux blocs économiques. Les détails devraient en être exposés lors du 3ème ASEM à Séoul en Octobre"...

Selon cette proposition, un réseau d'information à grand débit serait d'abord réalisé entre l'Europe et l'Asie, reliant les grands centres de recherche et cela dès l'an prochain. "La Corée et l'Europe seront alors engagés complètement dans l'E-commerce, E-affaires, E-éducation, E-technologie et l'E-culture..." . Selon LEE, la France et l'Italie auraient déjà manifesté un grand enthousiasme pour ce "Trans-Eurasia Network Project".

2. Chairman's Statement, ASEM 3

<http://www.asem3.go.kr/english/>

... In this age of knowledge, information and globalization, leaders recognized the importance of cooperation in the areas of information and communications technology as well as trade and investment. Leaders shared the view that information and communications technology have become pivotal engines of growth in the world economy and also that the resulting digital divide would deepen economic and social disparities in and among countries. With this in mind, they agreed to accelerate efforts to address the digital divide to promote the joint prosperity of the two regions and instructed Economic Ministers to review the progress made in this area. In this context, they also emphasized the need to establish and expand information and research networks between the two regions and among ASEM partners in order to facilitate the flow of knowledge and information as well as research exchanges. ...

3. Chairman's Statement, ASEM4

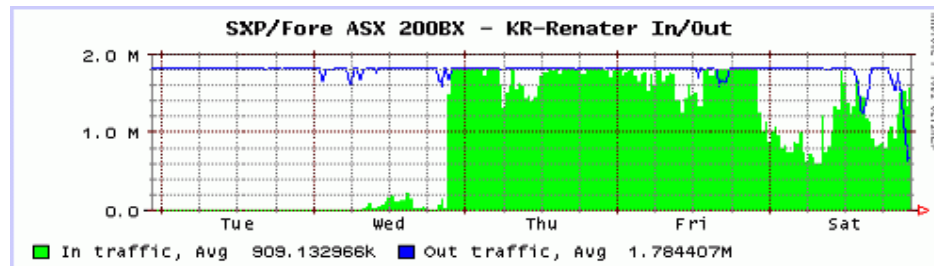
<http://www.um.dk/en/menu/ForeignPolicy/InternationalOrganisations/ASEM/ASEM4summit/Documentation/Chairman.htm>

... Reviewing developments concerning economic integration in their respective regions, Leaders expressed their desire to deepen economic cooperation between Asia and Europe. Following the successful conclusion of the Doha Development Agenda, region-to-region cooperation should be enhanced, including through new steps aimed at furthering economic integration between the two regions. Leaders underlined that closer economic links and the enhancement of the information and communication technology cooperation among ASEM partners, such as the Trans-Eurasia Information Network--form the basis of a strong partnership between Asia and Europe. ...

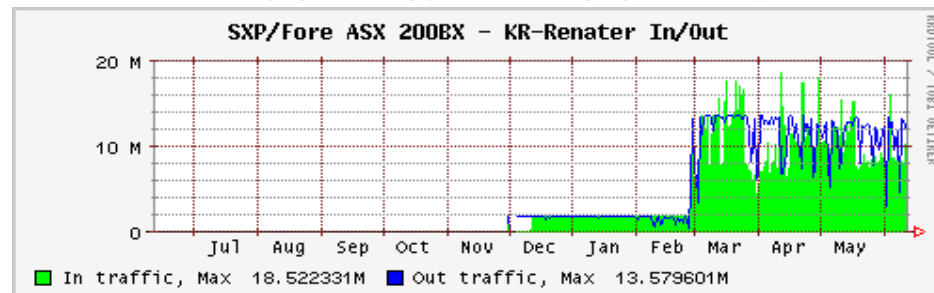
4. Traffic Graph of Korea-France link (TEIN1)

Source: KOREN/APII/TEIN NOC (Network Operation Center)

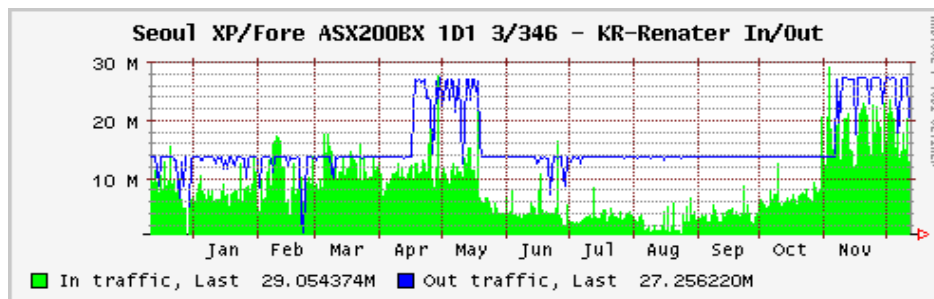
<Traffic graph in first launch (December 2001)>



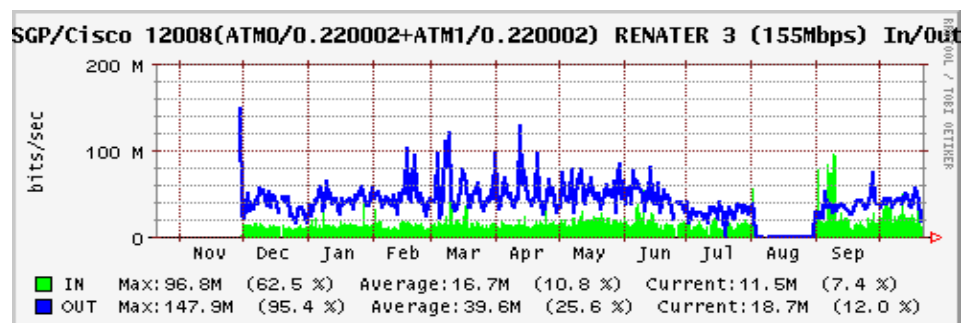
<Traffic graph in 1st upgrade to 10Mbps (March 2002)>



<Traffic graph in 2nd upgrade to 34Mbps (November 2003)>



<Traffic graph in 3rd upgrade to 155Mbps (December 2004)>



5. Record of Discussion, TEIN EGM2

<http://www.apiicc.org/tein/tein.jsp>

... Regarding intra-Asia connectivity, the linkage will also be set at 45 Mbps, and will establish direct linkages between Korea, on the one hand, and Japan, China and an ASEM partner from South-East Asia respectively, on the other. An ASEM partner from South-East will serve as a hub country for the ASEAN members of ASEM. The EC has indicated its readiness to consider funding the linkages involving the developing ASEM partners. Other costs of intra-Asian ASEM connectivity could be borne by Asian ASEM partners...

6. EU Commissioner Liikanen to visit South Korea

EUROPEAN UNION, DELEGATION OF THE EUROPEAN COMMISSION IN THE REPUBLIC OF KOREA/ Seoul, September 14, 2003/ Ref.: 916/2003 HYP

... Enterprise and Information Society Commissioner Liikanen will travel to South Korea from 13 to 15 September... The visit to South Korea, the first official visit by Commissioner Liikanen is an illustration of the good EU-Korea relations since the Trade and Cooperation Agreement entered into force in 2001. The visit will offer an opportunity to explain the European Commission's plan to provide a 10 Millions Euros support package for the expansion of the Trans-Eurasia Networking Initiative, a project that was launched by South Korea at the occasion of the third ASEM Summit in Seoul. ...

7. Record of Discussion, TEIN2 Information Day

...Regarding TEIN2, the ASEM partners present in the meeting will support DANTE in the activities particularly in the first phase of TEIN2 – the Feasibility Phase, investigating, the technical, commercial and institutional feasibility of the TEIN2 Action. ...

8. International joint research projects

< 2001-2002 >

NO.	Project Title	KR	Overseas Partners
1	IPv6 Native Networks and Streaming Application	Yong-Jin Kim (ETRI)	Peter Kirstein (UCL, UK)
2	Interoperability of Internet QoS Provisioning	Uoo-Hyun Jung (ETRI)	Peter Kirstein (UCL, UK)
3	Development of 3d Cyber Museum Technology	Yong-Moo Kwon (KIST)	Fraunhofer IMK (Germany), etc.
4	Implementation of HEP Data Grid using TEIN	Dong-Chul Son (Kyungpook National Univ.)	David Stickland (CERN, Switzerland)
5	Network-based User Authentication & Information Security Technology using Multiple Biometrics	Young-Rae Bae (ETRI)	M.C. Fairhurst (Univ of Kent, UK)

< 2003 >

NO.	Project Title	KR	Overseas Partners
1	Mobile IPv6 network in a roaming environment using TEIN	Ki-Chon Kim(Konkuk Univ.)	ENST Bretagne (France)
2	Study on Nano-electronic Transistor using TEIN	Tae-Young Won(Inha Univ.)	Univ. of Valladolid(Spain), Munich Univ.(Germany)
3	Sharing & Application of Water Quality Information	Dong-il Seo(Chungnam Nat'l Univ.)	Royal Danish School(Danmark)
4	Tele-dermatological Service System between Korea-China-Europe using TEIN	Jong-Man Cho(Inje Univ.)	Univ. of Graz(Austria), Univ. of Zhengzhou(China)
5	Weather & Climate Forecast and Data Exchange using TEIN	Jai-Ho Oh(Pukyong Nat'l Univ.)	Bonn Univ.(Germany)
6	Mobile Embedded Software Production and Testing Technology	Nam-Yong Lee(Soongsil Univ.)	Imbus AG(Germany)

< 2004 >

NO.	Project Title	KR	Overseas Partners
1	Mobile IPv6 network in a roaming environment using TEIN	Ki-Chon Kim (Konkuk Univ.)	ENST Bretagne (France)
2	Study on Nano-electronic Transistor using TEIN	Tae-Young Won (Inha Univ.)	Univ. of Valladolid(Spain), Munich Univ.(Germany)
3	Sharing & Application of Water Quality Information	Dong-il Seo (Chungnam Nat'l Univ.)	Royal Danish School(Danmark)
4	Tele-dermatological Service System between Korea-China-Europe using TEIN	Jong-Man Cho (Inje Univ.)	Univ. of Graz(Austria), Univ. of Zhengzhou (China)
5	Weather & Climate Forecast and Data Exchange using TEIN	Jai-Ho Oh (Pukyong Nat'l Univ.)	Bonn Univ.(Germany)
6	Mobile Embedded Software Production and Testing Technology	Nam-Yong Lee (Soongsil Univ.)	Imbus AG(Germany)
7	International Culture Performance on IPv6& HDTV	Dae-Young Kim (ANF)	Renater(France), Univ. of Washington, ResearchChannel(US)

< 2005 >

NO.	Project Title	KR	Overseas Partners
1	Study on the Construction of Weather and Climate Change Data Exchange System between Korea and Europe using TEIN/APII	Jai-Ho Oh(Pukyong Nat'l Univ.)	Bonn University(Germany)
2	One-way End-to-End Packet Delay Measurement for IPv6 Application in TEIN	Yang-Hee Choi(Seoul Nat'l Univ.)	ENST-Bretagne(France)
3	Study on Simulation of Nano-Scale Transistor using the TEIN Network	Tae-Young Won(Inha Univ.)	Univ. of Valladolid(Spain), Munich Univ.(Germany)
4	Intercontinental Research of Advanced Network & Culture Technology on TEIN/APII	Dae-Young Kim(ANF)	Catalunya Polytechnic(Spain), Univ. of Washington(US)

9. Working Groups

< 2004 >

NO.	Project Title	KR	Overseas Partners
1	Advanced Network Research on TEIN/APII	Yong-Jin Park (Hanyang Univ.)	Internet2(US)
2	IPv6 & Traffic Measurement for TEIN/APII	Kyungnam Univ.	Kyushu Univ.(Japan)
3	Collaboration System for Tele-medicine on TEIN/APII	Young-Woo Kim (Nat'l Cancer Center)	Kyushu Univ.(Japan)
4	Application to Physical Sciences	Dong-Chul Son (Kyungpook Nat'l Univ.)	CERN(EU), FNAL(US), Caltech(US)
5	Remote Joint Collaboration by Access Grid	Ji-Tae Shin (Sungkyunkwan Univ.)	Manchester Univ.(UK)
6	Cyber Infrastructure for Earth System	Pukyong Nat'l Univ.	NCAR(Germany)

< 2005 >

NO.	Project Title	KR	Overseas Partners
1	TEIN/APII Advanced Network & IPv6 Working Group	Yong-Jin Park (Hanyang Univ.)	Kyushu Univ.(Japan)
2	TEIN/APII International Public Health Education Working Group	Ok-Hwa Lee (Chungbuk Nat'l Univ.)	Kyushu Univ., Nagasaki Univ.(Japan), Stanford Univ.(US)
3	TEIN/APII Medical Science Working Group	Young-Woo Kim (National Cancer Center)	Kyushu Univ.(Japan)
4	TEIN/APII High-Definition Video Transmission and Conference System Working Group	Ji-Tae Shin (Sungkyunkwan Univ.)	USC(US), CERNET(China)
5	TEIN/APII Physics Working Group	Dong-Chul Son (Kyungpook Nat'l Univ.)	IHEP(China), KEK(Japan), Caltech(US)