VinaREN updates and ICT Training activities

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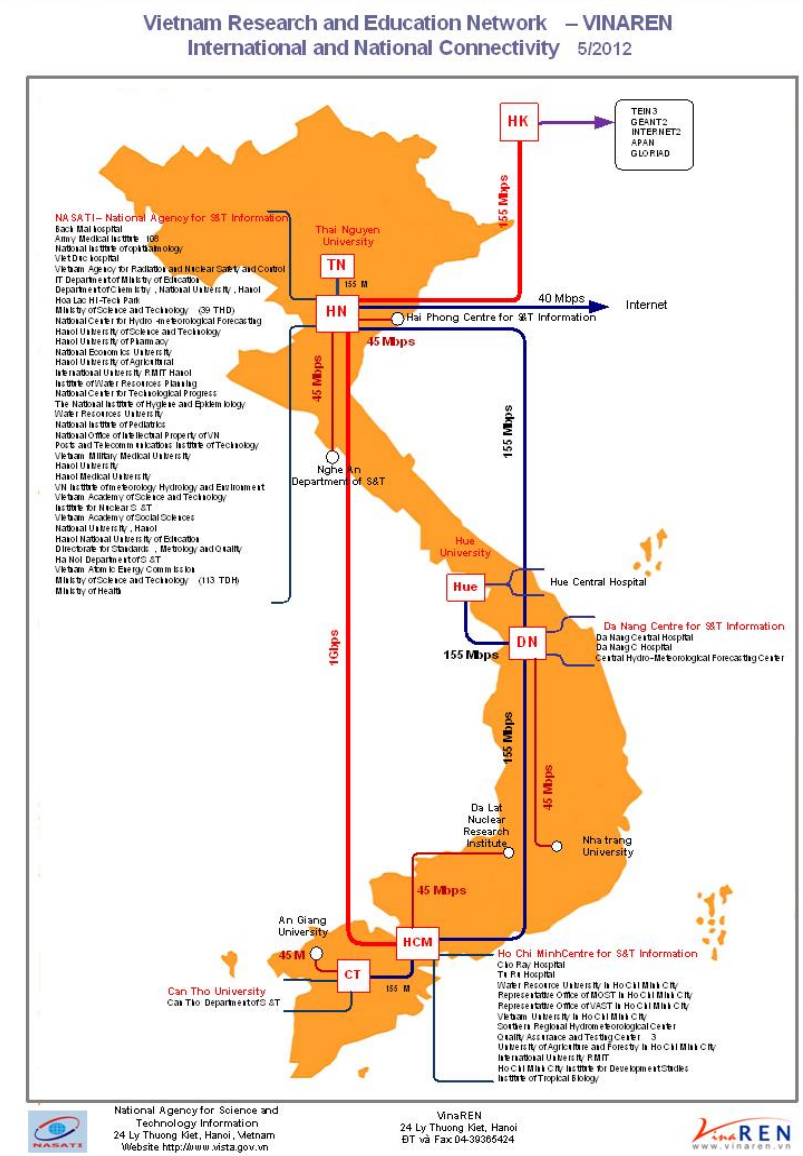
VinaREN – the unique NREN in Vietnam

- VinaREN is the National Research and Education Network of Vietnam. It is an advanced information infrastructure that fosters nationwide and worldwide collaborations of researchers and educators communities in Vietnam.
- VinaREN was officially launched at the national scale on 27 March 2008.
- At the 23rd APAN Conference, 2007, Vietnam was officially joined APAN
- VinaREN national backbone network is formed from the connection of six network operation centers (NOC) located in Hanoi, Da nang, Ho Chi Minh City, Hue, Can Tho and Thai Nguyen.
- VinaREN connects 100+ R&E institutions in 11 provinces & Cities

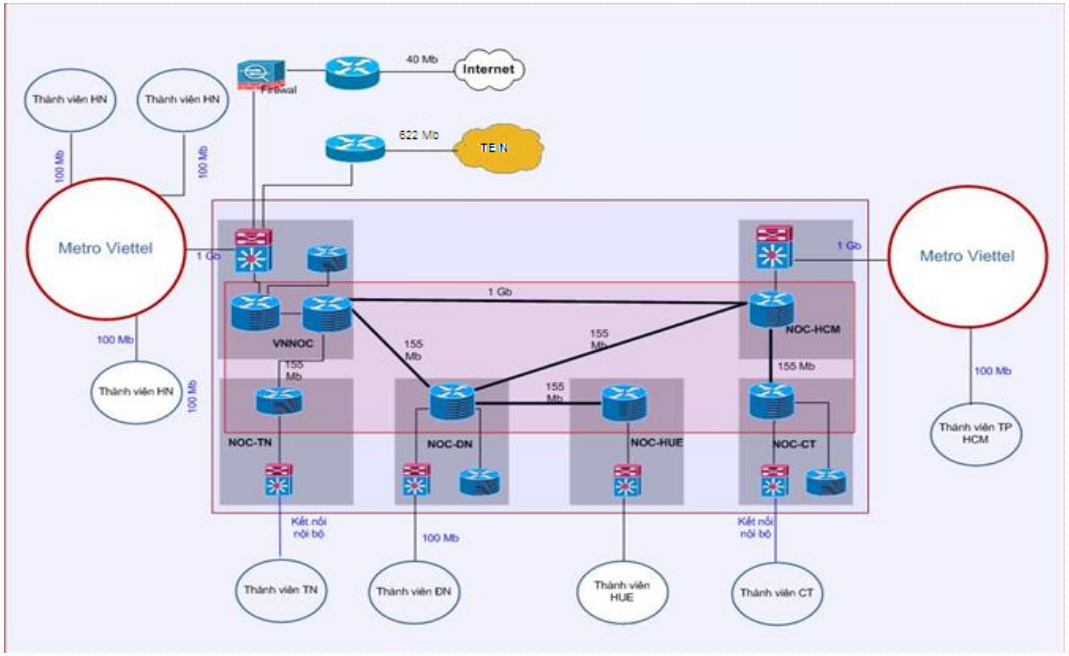
Technical infrastructure



In 2011, VinaREN upgraded all the channels on the national backbone. Currently, the bandwidth at all channels have been increased from 2 to 8 times higher than before.

- ✓Hanoi - Da Nang: 155 Mbps;
- ✓Da Nang - Hue: 155 Mbps;
- ✓Da Nang - Ho Chi Minh City: 155 Mbps;
- ✓Ho Chi Minh City - Can Tho: 155 Mbps;
- ✓Hanoi - Thai Nguyen: 155 Mbps.
- ✓Hanoi - Ho Chi Minh: 01 Gbps;

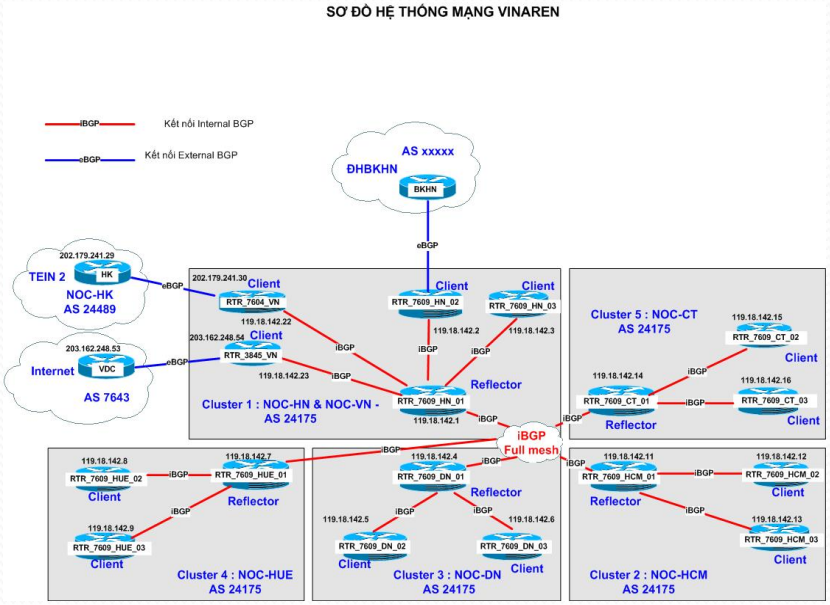
Technical infrastructure

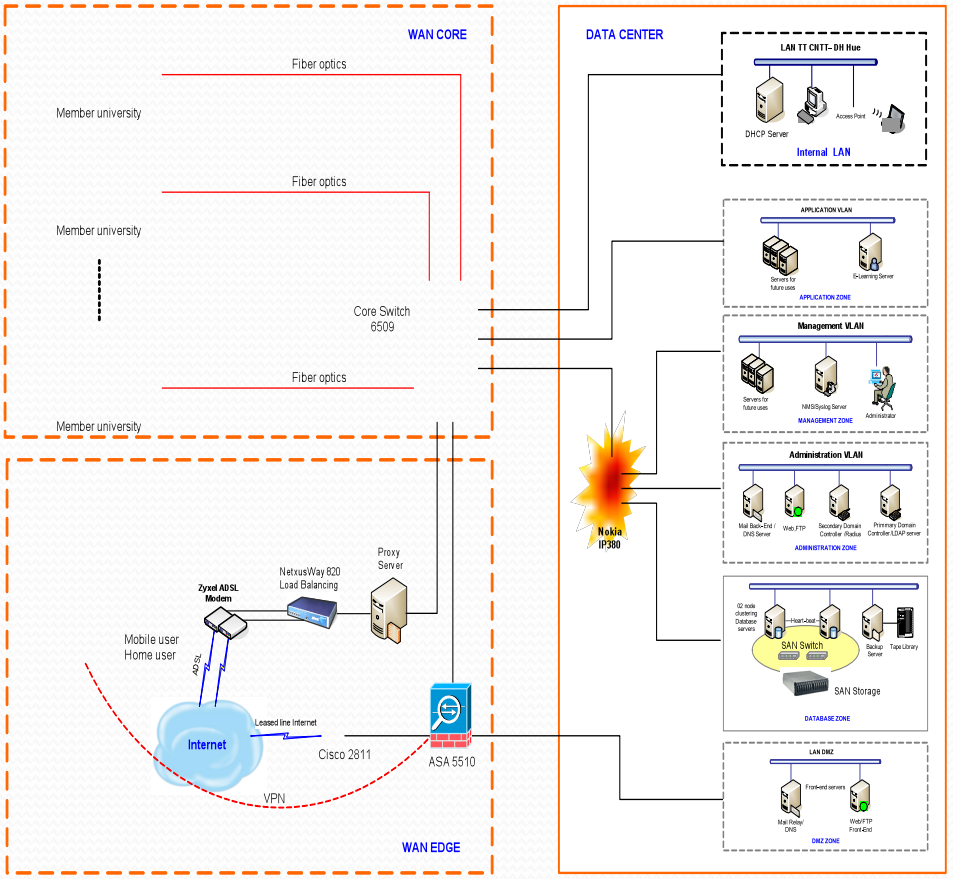


- VinaREN has been internationally connected to TEIN4 (Hanoi - Hong Kong) with a bandwidth of 622 Mbps. Through this connection, VinaREN has connections to GEANT, Internet 2 and APAN.
- In 2011, VinaREN cooperated with Viettel company to establish 100 Mbps connection for CamREN, including 10 Mbps to TEIN3 via VinaREN.
- VinaREN has 40 Mbps of commercial Internet for access to online databases and journals

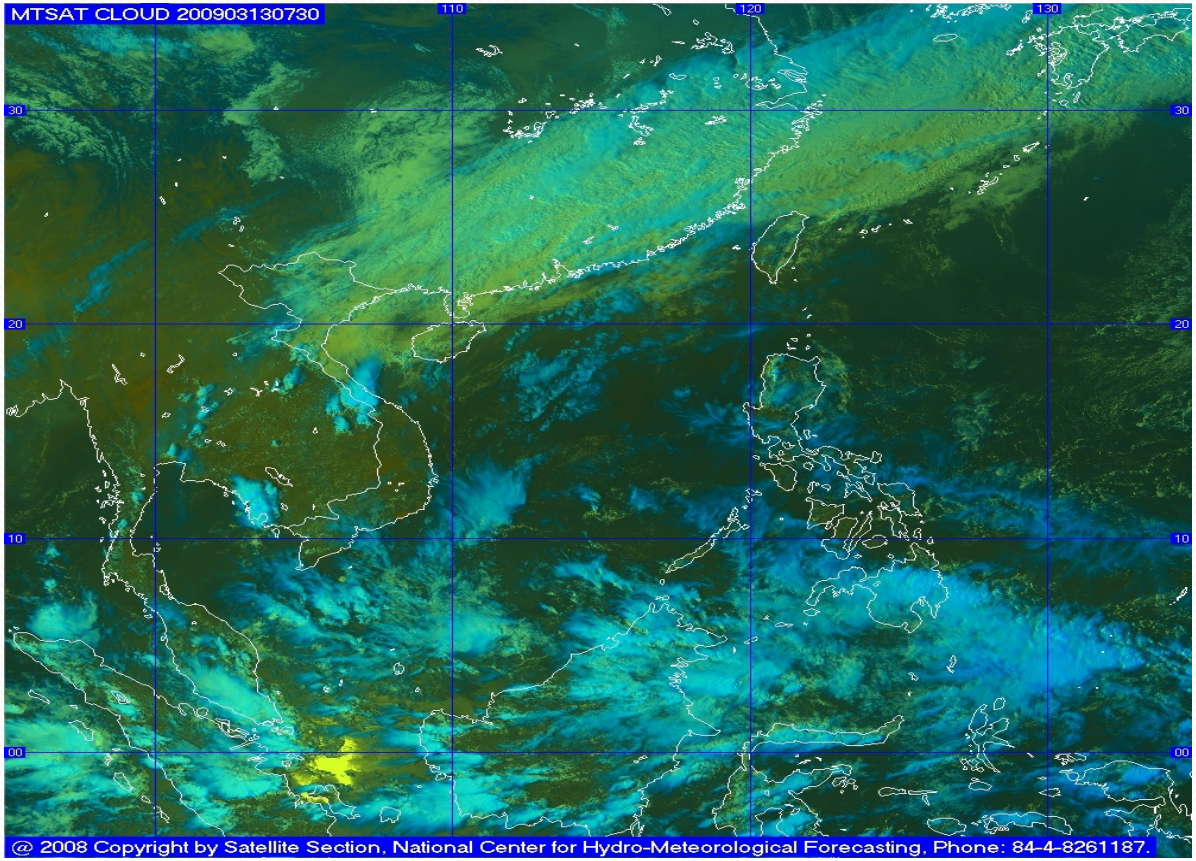
Research

- IPv6:
- Multicast (IPv4, IPv6)
- Video conferencing
- Network Administration
- Measurement of bandwith
- Grid Computing
- Cloud computing
- Telemedicine
- Meteorology, weather forecast, climate change





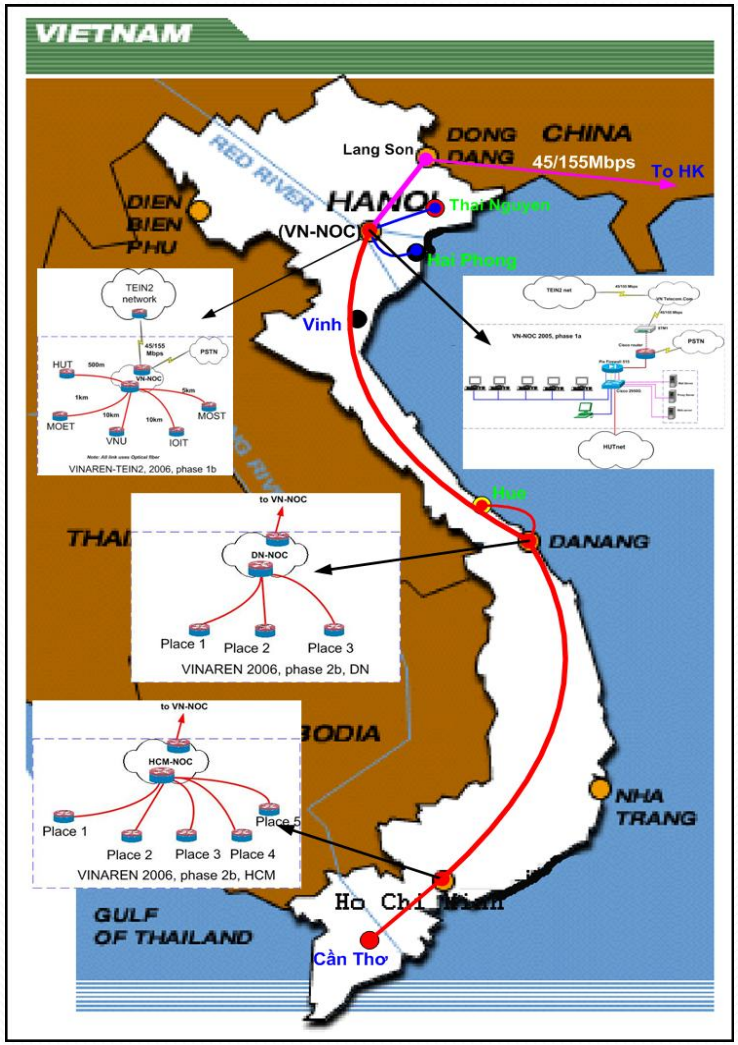
VinaREN supports Weather Forecasting & Climate Modeling



- In 2011, VinaREN-based international satellite sensing information network has been created to facilitate access and exchange environmental data sets, satellite images for the weather forecast and climate modeling.

Grid Computing

- VinaREN is survival condition for R&E institutions in Vietnam to conduct the researches on the grid computing.
- VinaREN supports VN-Grid's operation and participation in Pragma.
- VinaREN facilitates collaborations of existing high performance computing centers (Hanoi University of Technology, HCM University of Technology, Vietnamese National University in Hanoi, Vietnamese Institute of Information Technology (IOIT), Vietnamese Military Technical Academy (VMTA)) in Vietnam.



Supports grid computing

- In 2012, three major scientific research establishments in the country: Two Vietnam National Universities, in Hanoi (VNU) and in Ho Chi Minh City (VNUHCM) and the Vietnam Academy of Science and Technology (VAST) have simultaneously proposed project initiatives to build up and maintain an unified, sharable and sustainable High performance computational infrastructure for science research, or in other words, the Vietnam National Grid Initiative (NGI).
- This infrastructure should be of course connected and interoperated with international scientific computing infrastructures as EGI (European Grid Infrastructure) and others grids.
- A Memory of Understanding about the cooperation to create an unified grid infrastructure between these three research units and VinaREN were signed. This grid is mainly deployed on the Vietnam Research and Education Network (VinaREN) and connected to the grid EGI.

Training

- Human resource training for NOCs and Vietnam R&E community.
- Coorporated with HRD of TEIN3 for Training at VinaREN.
- Training engineers on the fields:
  - Network Management
  - Network Security
  - NOC management
  - Application on the Network

➢ Cooperate with InTERLab (AIT, Thailand) and NSRC (Oregon University, U.S.) to organize international training courses on "Campus Network Design and operation" and "Multicast hand-on" for network technicians coming from 9 different countries in December 2011.

➢ Cooperate with InTERLab (AIT, Thailand) and APNIC to organize international training courses on “Basic Routing” in June 2012.

Workshop

PROMOTE CLOUD AND APPLICATIONS IN TEIN4 NETWORK

The International Workshop "**Promote Cloud and the Applications in the TEIN4 network**", jointly organized by Trans-Eurasia Information Network-star Cooperation Center (TEIN*CC), Vietnam Research and Education Network (VinaREN) and Thailand Research and Education Network (ThaiREN), was held on 6th – 7th December 2012 in Hanoi. The Workshop was presented by Mr. Patch Lee – Director of Technical Team, TEIN*CC and more 40 participants (onsite) and hundreds of participants (remote via VC) from research institutions, universities and companies in 8 TEIN countries (Thailan, Nepan, Cambodia, Singapore,Korea,Malaysia, Philippin, Vietnam). 16 presentations from 7 countries, 8 among them are from Vietnam

E-Learning

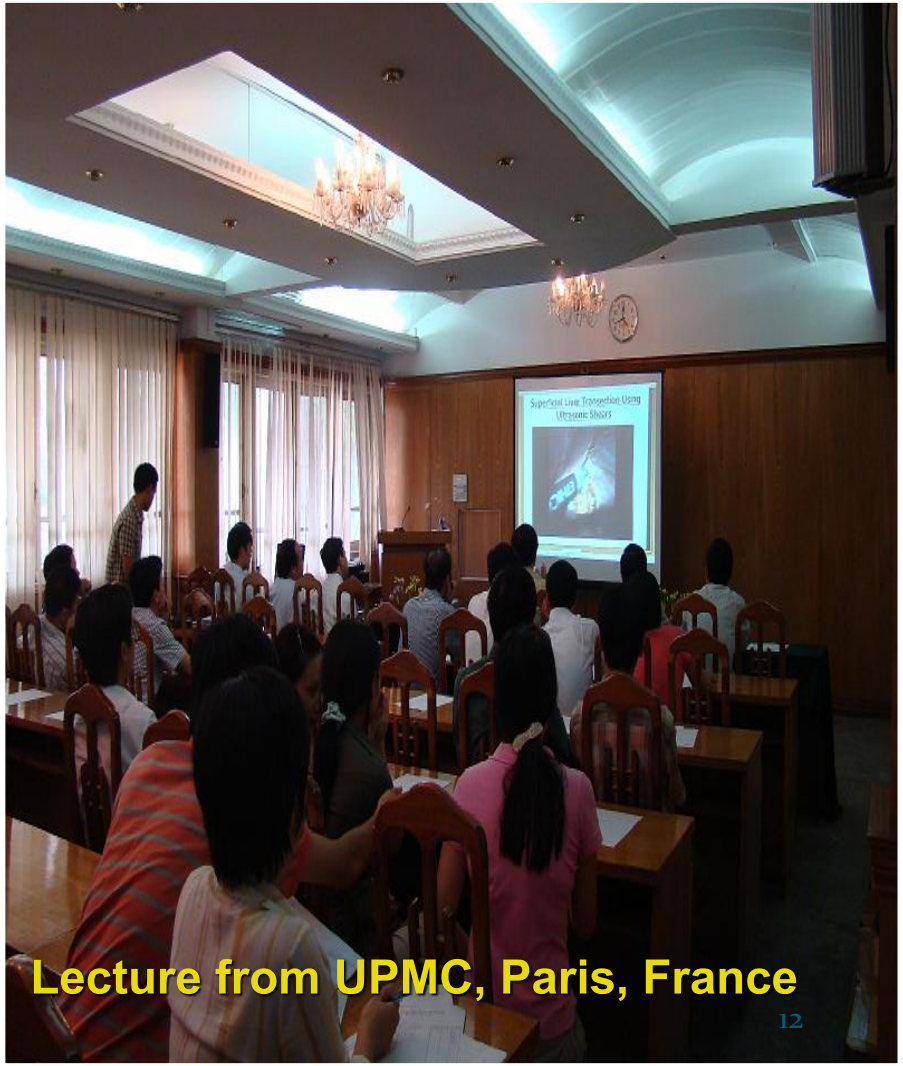
- E-Learning become more and more popular in Vietnam Universities.
- Some Universities have e-Learn projects:
  - – Teachers' University,
  - – Hanoi University of Science and Technology,
  - – Open University of Hanoi…
- Some e-Learning Products by Universities and IT Companies:
  - – Authoring tools
  - –LMS, LCMS
  - – Content development
- E-Learning services:
  - – Universities: ICTC-MOET, HUST, HCMC-UT,…
  - – Organizations, Companies: IPT-VNPT, NCS, FPT, AIT by GMS-VU,…
  - – Vietnam-Japan:
    - • JICA's Hanoi-Tokyo Videoconferencing system
    - • NTT-VNPT's and NTT-HUT's e-Learning Systems
    - • METI-MOST with VITEC-JITEC e-Learning Center…

VinaREN fosters E-learning

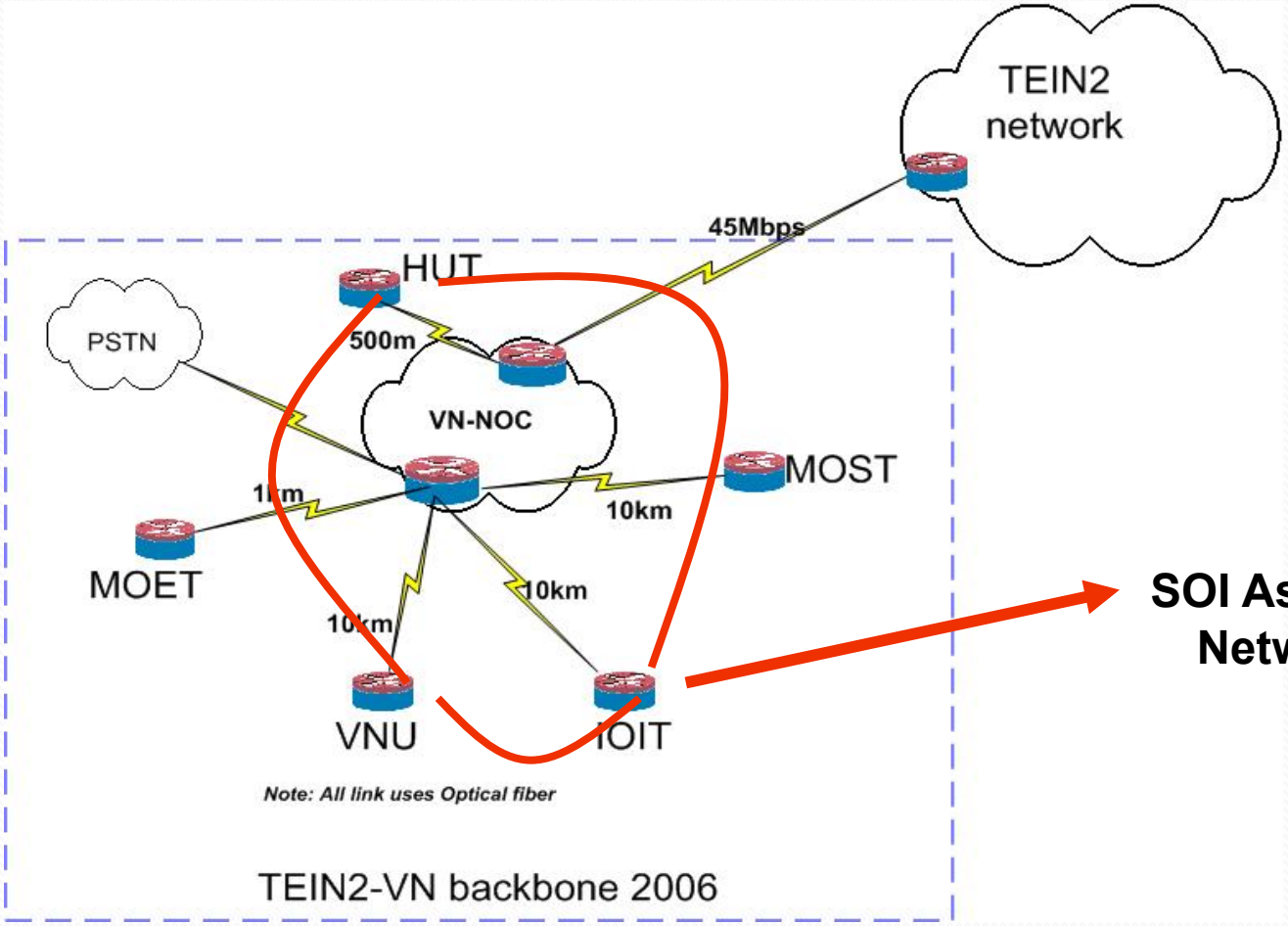
•VinaREN supports its members in organization of online seminars, workshops, conferences.

•VinaREN supports and trains members to implement video conferencing and DVTS.

•VinaREN supports the advanced network infrastructure for running E-learning applications.



SOI Asia/AI3 with TEIN2/3 in VN



ICT HR Training

- HR in software, digital content industry increased by ~40% annually and ~15% in hardware and telecom
- Number of universities/colleges that offer electronic, telecom & IT courses is continuously increasing. In the last 5 years of 2006- 2010, around 10 to 20 universities and colleges, many of them were non-public institutions, were established or upgraded each year.
- Recently there are 93 universities, 156 junior colleges, 187 technical secondary school in IT area.
- Basic IT course has been delivered in all non-IT universities, colleges; IT application is delivered in many universities
- Actual number of ICT- related students enrolled: 56,338
- Number of ICT- related students studying (until 31/12/2010): 169,156
- Number of ICT- related graduates: 34,498

IT training models

- Formal programs
- Informal programs (Over 50 informal training institutions can provide 7,000- 10,000 IT experts per year)
- In-service training (125 IT application centers with about 200,000 learners)
- Distance learning
- Second degree training for graduates of other disciplines
- IT international programs and informal training:

  IFI (France), Japanese IT program at National University in Hanoi, Indian Nation IT Institute program at Hoa Sen College, 9 APTECH training centers, Arena, NIIT, Kerox (India), Raffles (Singapore), Kent (Australia), CISCO training program.
- ICT human resource:

  - 50,000 workforce in telecommunication sub-sector, 20,000 workforce in IT (8,000 workforce in software)
  - University graduates account for 60% of workforce in new telecommunication companies (85% in SPT, 80% in Viettel, 60% in ETC and 58.87% in VTI/VNPT).

Weaknesses

- Quality of training remains poor compared with other countries in the region, failing to meet with demand.
- English language skills remain weak among young graduates
- Training programs is not comprehensive and systematic
- IT application for specific purposes is nothing more than using existing specialized software programs
- Absence of IT management training programs
- IT application is yet to have effect on teaching and education management.
- Shortage of professionally and English proficient human resource
- Only 10-15% of new graduates in IT meet programming and English requirements of IT companies
- Shortage of ICT experts
- Lack of CIO at all levels
- Limited computer and English proficiency among Users

ICT HR development Solutions

Government:

- Implement ICT HR Development Program lead by MoET
- Develop ICT HR Development Plan within Master Plan for Education and Training to 2010
- Allow establishment of 100% foreign-invested ICT training institutions
- Support non-state universities in ICT HR training
- Improve assessment and evaluation system of ICT training of different levels and bring it in line with international standards
- Re-assess & classify all ICT training institutions of different levels with a view to identifying appropriate actions (elimination, upgrading, development) to be taken for each institution.

ICT HR development Solutions

Government:

- Grant quality certification to international and Vietnamese ICT training institutions
- Give priority investment to selected IT faculties so that their facilities are as advanced as those in counterpart faculties of advanced countries in the region so as to make sure of necessary conditions for quality ICT training and research
- Prepare to establish new state ICT university
- Send some undergraduates and graduates overseas for degree training.

ICT HR development Solutions

Universities:

- Renovate contents in ICT training programs & curricula.
- Review, adjustment and completion of existing ICT training programs in different schools, removal of outdated programs that fail to meet requirements
- Development of new ICT training programs giving more emphasis on practice in all ICT subjects
- Decentralization to leader ICT faculties and universities to take proactive position towards program and curriculum development as references that can be used for other institutions
- Maximization of possible use of training programs and curricula of foreign institutions for reference and teaching purposes

ICT HR development Solutions

Universities :

- Connect training institutions, research institutes in the whole country with the famous universities in the world via VinaREN.
- Promotion of ICT teaching in secondary schools
- Develop training programmes and textbooks for each level of education in the whole system through to tertiary education
- Digitalize training curricula, textbooks and reference materials, compiling interactive programmes to assist learning
- Use of mass media to disseminate information and raise awareness of ICT among society.

Next Activities

- Promote activities of working groups: telemedicine, climate change, grid computing, e-learning and network engineering.
- Participate the research projects on the network technologies and the cloud computing in TEIN4 community;
- Implement new technologies such IPv6, Multicast, etc… ;
- Promote information resources sharing among VinaREN members;
- Connect VinaREN to GLORIAD by 1 Gbps via Singapore.
- Expand the connectivity of VinaREN to 50% of R&E institutions, universities by the year 2015 and to 100% of ones by the year 2020;
- Support high bandwidth network infrastructure for developing Vietnam National Grid Initiatives;
- Cooperate with NSRC and the others for ICT training courses ;
- Build Data Center and deploy the applications on the cloud;
- Support TEIN4 connection for the universities and Network Operation Center participating in the ASEAN cyber university project (Cambodia, Laos, Myanmar and Vietnam)

Thank you