Welcome to Euro-Southeast Asia 2006!

The Euro-Southeast Asia ICT Forum 2006 (EUSEA 2006), supported by the European Commission and ASEAN, took place in Singapore during the imbX event from 19 to 23 June 2006.

This unique event, sponsored by British Telecommunications plc, provided a platform for Europeans and Southeast Asians to foster business, research, policy and regulatory collaboration.

Over 600 of the most influential European and Southeast Asian ICT business leaders, researchers and regulators discussed technological advances and explored current and future ICT landscape of the two regions.

EUSEA2006 was opened by Viviane Reding, European Commissioner for Information Society and Media

The Added Value of EUSEA2006

EUSEA2006 CONFERENCE
Shangri-La Hotel, Singapore, 19-20 June 2006

- Plenary and Parallel Sessions: debating business and policy paradigms for future ICT
- ICT training: hands-on training by global experts
- Networking meetings: creating future partnerships
- Get in touch sessions: collaboration leading to innovation

EUSEA2006 EXHIBITION
Cutting-edge European technologies were showcased at the European ICT Pavilion during the international IT trade fair, CommunicAsia-EnterpriseIT2006, Singapore Expo, 20-23 June 2006.

For further information, please contact the EUSEA2006 organisers at info@eusea2006.org
D5 - Next Generation Networks

Workshop Overview

Next Generation Networks (NGN) mean different things to different people, but there is broad agreement that they assume an IP-based environment, with broadband access, always-on characteristics, and multi-service capabilities in an open, carrier-independent structure.

The objective with NGN is to develop a new common architecture of networks that can evolve to handle multimedia services in an integrated and convergent way. To achieve the vision of ambient intelligence and ubiquitous communication/computing, the models and networks for content provisioning, intelligent and high-performance appliances and high-capacity network infrastructure need to converge into an integrated architecture of NGN.

The issue of availability of NGN to provide sustainable broadband infrastructure and services is therefore a key ingredient to achieve the overall objective for Europe to be the most competitive Information and knowledge-based society and economy in 2010 and further on.

NGN has been discussed and defined many times as the convergence of technologies and networks gradually has begun, and the process will be an evolution of current network technologies rather than a revolution into something new which is economically impossible.

The NGN objective need to be promoted through and converged in standardisation (or de-facto standard setting) bodies like ITU, IEEE, ETSI, 3GPP and IETF. This is a time-consuming exercise as these bodies approach the issues from different views (and investments) and their roles need to be adapted and changed to reflect the direction of a commonly agreed NGN.

A Roadmap to NGN will have to consider non-technical factors as well as general technological trends. Business Models, Societal and Economic/Political Factors generally determine the rate at which networks will evolve, since they influence the financial resources that are available, the incentive for introducing new services, and the level of governmental support. The Evolution of the Network depends on the general trends taking place in the Core and Access networks, with special attention to the optical and CATV environments.

This session will discuss the current evolution towards next generation networks and the different approaches being undertaken in Europe and elsewhere, namely:

- Ad-hoc networks
- RFID and location services
- Sensor networks and ambient intelligence
- Digital Divide
- Ubiquitous computing and communication

This session will be co-chaired by Radu POPESCU-ZELETIN - Fraunhofer Institut – Germany and Lawrence WONG - Executive Director A*STAR Institute for Infocomm Research - Singapore.

Workshop Programme

Date 20, June 2006
Start time 14:30
End time 16:05
Location Shangri-La Hotel Singapore

BROADWAN affordable broadband services for everyone using wireless access networks
Terje Tjelta - Telenor - Norway

The FP6 project BROADWAN focussed on economical realistic network architectures to provide true broadband services for all, key features for low-cost next generation wireless solutions, and advanced utilisation of broadband services including solutions for rural areas. Business, organisations, education, health care, culture, and community authorities take more and more advantage of broadband services. Broadband wireless technology has, in particular, the potential of improving third world societies dramatically. Efficient wireless systems ensure that everyone can get access within a reasonable time frame. The radio solutions will be important for competition and represent an extension of the fixed network into the broadband nomadic and mobile domain. The results addresses a total solution for hybrid broadband access networks for fixed and nomadic users, dealing with a global coverage architecture, new generation adaptive equipment and automatic network planning and managements.

Will Overlay Networks Rule in NGN?
Jo Yew Tham - Institute for Infocomm Research - Singapore

The convergence of PSTN and PSDN introduces a seamlessly blended multi-service network which supports the transmission of data, voice and video. The next generation network (NGN) will be an IP-based packet-switched network in which
the service-related functions are distinctly separated from the underlying network transport-related technologies. In the NGN architecture, the central-office (CO) functionalities will be distributed to the edge of the network thus creating a more open and flexible infrastructure that allows new services to be deployed to end users at a much lower cost to market entry. As much as new communication protocols and networks (ranging from WiMax and HSPDA to IPv6 and DVB-H) have made possible new streaming and downloading services, the proliferation of overlay networks is making its marks on the OSI Level 5 from the perspective of virtual routing and session management among communicating nodes on the edge networks. The advent of peer-to-peer (P2P) based VoIP and BitTorrent downloads provides promising evidence of a robust overlay networking architecture for the present and the future. But will overlay networks rule in future services and applications?

EUSEA Talk on NGN_ThamJoYew.ppt (691Kb)

Dr. Peter van Daele
Peter Van Daele - IMEC-Ghent University - Belgium

D5 - Peter Van Daele - BREAD Presentation 06-06-20 EUSEA - Parallel Session NGN.pdf (1098Kb)

Dr. Radu Popescu-Zeletin
Radu Popescu-Zeletin - Fraunhofer-Institut FOKUS - Germany

D5 - Radu Popescu-Zeletin - PanelSINGapore.01.pdf (2487Kb)

Dr. Sureswaran Ramadass
Sureswaran Ramadass - Universiti Sains Malaysia - Malaysia
NGN’s : What, why and EU involvement?

Peter Van Daele
IMEC-Ghent University
FP6-BREAD project Coordinator
The BREAD Project

Develop a multi-disciplinary view for the realisation of ‘broadband for all’

www.ist-bread.org

www.bbeurope.org
In the developed world, ICT has become a crucial enabling factor in the functioning of society and economy.

ICT has a fast growing influence on the societal behaviour of people.
Challenges to the network

From “Telecom” services to “Lifestyle Infrastructure”

Useful for every aspect of daily business/life

Sharing information empowers individuals and communities, and enables whole societies to benefit from the experience of everyone within them

(after Dr. J. Schwarz da Silva, EU Commission)
The Internet of Objects

M2M communications:
While the demands for person oriented (P2P and P2M) communications will someday saturate, M2M communications between RFID tags will create new and unprecedented amount of demands.

Drastic increase in the number of network connections as the network evolves.

Connections extended to various things with RFID tags
- Clothes
- Books/ documents
- Parcels
- Brand name products
- Marketable securities/Cheques
- Gift coupons

(after Dr. A. de Albuquerque, EU Commission)
Body Area Networks

- ECG, Blood Pressure
- Blood Composition (e.g. lactate)
- Wearable Digital Assistant
- Multiple Hop BAN
- Position & Force Sensors
- Wireless Link to Coach and Med Team

(after Dr. A. de Albuquerque, EU Commission)
For people who have constant fear (e.g. phobia) or suffer from depression

A monitoring by psychologists and counsellors to provide advice and support to overcome their worries.

Reliability – liability – security - privacy
Sensor networks

Food processing

Cost – size – integration – lifetime
Ambient Intelligence

• **Person-to-Anything (Physical) Interaction**
  - leading to more natural means of interactions

• **Enablers are Sensor Networks**
  (actuators and sensors)
  - ubiquitous computing
  - ‘disappearing technologies’

• **Context Information for**
  Context aware applications
  services
  communications

Me? Oh, I’m still stuck at work
Estimate of connected devices 2012 ~ 17 Billion

- Appliances/Toys: 11,000M
- Industrial/Automotive: 400M
- Entertainment: 1,300M
- Handhelds: 2,600M
- Computers: 1,080M

Add Tags and Sensors - over 1 trillion

(after Dr. J. Schwarz da Silva, EU Commission)
Current Networks

Access specific terminals
Access specific services
Independent service platforms
Multiple customers identifiers
Separate billing
Separate regulation

(after Dr. Phil Holmes, Motorola)
Future Converged Networks

Data, voice and multimedia will be carried over heterogeneous broadband networks running IP

- Supporting very large number and variety of devices
  - Wireless communicators: Cell phones, PDA’s, pagers ...
  - Interactive “smart” sensors: health monitors, environmental sensors ...
  - RFID tags

(after Dr. J. Schwarz da Silva, EU Commission)
Not a single reason to move to FMC

What is the main benefit of FMC for telecom service providers?

- Lower capex or opex
- Lower customer churn
- Higher ARPU
- Ability to expand into new market segments
- Don't know/not sure

Source: Heavy Reading Fall 2005 Survey of Service Provider Technology Deployment Plans
“Within the next decade, the first link in every network will always be wireless-cellular, WiFi, WiMax, UWB, and so on-and devices will automatically choose the most appropriate type of wireless link based on location, price, and bandwidth.”

Source: Heavy Reading Survey of Service Provider Attitudes to Fixed-Mobile Convergence, November 2004. Base: 109 Service Providers
... but how do we get there?

What is the biggest obstacle at present to FMC?

- Poor coordination between wired/wireless service providers
- Inability to ensure QoS across network/service boundaries
- Legacy infrastructure
- Lack of real demand
- Lack of attractive handsets
- Security and authentication
- Badly designed services or interfaces
- Don't know / not sure

Source: Heavy Reading Fall 2005 Survey of Service Provider Technology Deployment Plans
Packaging is critical

- The winners will be those who bundle the right packages for customers

User is looking for:
- experience
- personalisation
- mobility
Future Converged Networks

Convergence is about the collapse of disparate technology, equipment and services into a set of common and ubiquitous technology, equipment and services

(after Dr. J. Schwarz da Silva, EU Commission)
OFDM on copper pair, ADSL, then VDSL: RACE, ACTS ⇒ ADSL deployment success worldwide, EU companies in the forefront;

HiperLan, HiperMAN: RACE, ACTS ⇒ benefits reaped elsewhere through WiFi and WiMax deployments/prospects;

FTTx: from RACE to IST FP6 ⇒ prospects for FTTH are now becoming real, but Europe may be lagging behind and in search of a right regulatory approach. Difficult industrial sector, dropped by many EU key players;

3G/UMTS: RACE, ACTS ⇒ EU success at standardisation level; Y2005: very significant take off of UMTS world-wide,

B3G/4G: ACTS, IST FP5, IST FP6 ⇒ issue still developing, risks of EU taking a less proactive approach than Asia, heavily committed to this issue;

Broadband Satellite: ACTS, IST FP5, IST FP6 ⇒ High expectations, high investments, but ony niche markets. Good position of EU industry through development of DVB-RCS standard

DTV-HDTV: from RACE to IST FP5 ⇒ world-wide success of DVB standard; promising prospects for EU led technology like MPEG4 for HDTV.

Mobile TV, DVB-H: from ACTS to IST FP6 ⇒ promising technology developed in the EU, need to progress on the regulatory/spectrum front.

PLC: IST FP6 ⇒ is PLC in the race at the access level?

UWB: IST FP5, FP6 ⇒ better positioning of EU industry and regulatory regime being clarified, but too early to judge on success from an EU perspective

(after Dr. J. Schwarz da Silva, EU Commission)
FP6 Objectives: Broadband for All

- Optical technologies offer **infinite bandwidth** in the core network
  - EU industry is leader supported by Academic excellence.
  - Optical switching and full deployment is coming soon.

- Low cost **access for all**
  - Development of full range of access technologies (DSL, radio, satcom, etc..) including alternative solutions like powerline.
  - Tackle digital divide (ex: rural, NMS..)

- Fixed Mobile **convergence**
  - Integration of networks
  - IP is deployed everywhere to offer Internet, voice, video

*(after Dr. A. de Albuquerque, EU Commission)*
Roadblocks in BB deployment

The Internet has become too important to be left to the engineers

• Stronger management institutions should be created
  – need for action at government level
• New solutions must be explored
  – email validation?
  – “third party” virus insurance?
  – identity and authentication?
  – intellectual property responsibilities as well as rights?
  – consolidation and regulation of the value chain?

BB is used for downloading security patches that are needed because the connection is broadband
• 20% of population over 65 by 2025

• Challenges
  - Cost of Care:
    • 20% of GDP by 2025
  - Social exclusion

• Opportunities
  - ICT can reduce costs and improve Quality of Life
  - Fast growing market

Source: OECD Factbook 2005

(after Dr. J. Schwarz da Silva, EU Commission)
Conclusions

Internet Access will become a “utility” in the developed world with large impact on economic and societal life.

But in developing countries ICT is to be seen as an “enabler” towards economic and societal development.