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Dates

Early registration deadline 11 July 2009

Conference Dates 11-13 Aug 2009

Call for Participation

EuropeComm 2009

11–13 August 2009, London, UK

www.europecomm.org

Registration open

<http://www.europecomm.org/registration.shtml>

The First International ICST Conference on Communications Infrastructure, Systems and Applications in Europe

Keynote 1: *European Union and the Future Internet*

Paulo T. de Sousa

Head of Sector, Internet of the Future Directorate-General Information Society European Commission

Keynote 2: John Hand, *Head of Research Councils UK Digital Economy Programme*

Keynote 3: John Williams, *Professor of Health Services Research, Swansea University, Director of Health Informatics Unit, Royal College of Physicians, UK*

Rapidly decreasing costs of computational power, storage capacity, and communication bandwidth have led to the development of multitude of applications carrying increasingly huge amount of traffic on the global networking infrastructure. What we have seen is an evolution: an infrastructure looking for networked applications has evolved into an infrastructure struggling to meet the social, technological and business challenges posed by multitude of bandwidth hungry emerging applications.

Developments in optical communication technologies have shown potential of meeting technological challenges for bandwidth demands. Various solutions have been proposed so far for the discrete parts of the optical network infrastructure, however the most fundamental challenge at this point of optical networking evolution, apart from enhancing these solutions and inventing novel ones, is to combine these parts under a unified control and management framework. Although wireless technologies have undergone massive improvements, wireless is far from meeting mobility, bandwidth and other QoS challenges posed by the current and future applications and services. With an increasing number of collocated personal, local and cellular wireless communication systems the questions of optimum coexistence and inter-networking are raised.

While bandwidth, mobility and QoS requirements for many existing applications are on the rise, new applications and services are emerging, such as in healthcare and transportations sectors. These emerging services are making the design space for infrastructure developers even more challenging.

We organize a **Symposium on Communications** encompassing mobile, optical and converged technologies as well as services and applications. We have identified two key application themes of these technologies for the discussions during the event. These are **Intelligent Transportation Systems** and **Healthcare services**. We also foresee **Future Internet Infrastructure and Services, Open Architectures and Innovation Processes** as the key cross-cutting subjects for the symposium.

The event will bring together decision makers from the EU commission, top researchers and industry executives to discuss directions of communications research and development in Europe. Also, the symposium will attract academia and industry representatives, as well as government officials to discuss the current development and future trends in technology, applications and services in the communications field. The EuropeComm vision is to establish itself as the meeting place for European telecommunication infrastructure and services, an annual event where stakeholders meet from all different communities and where society business is done.

Featured themes of the conference:

Communication Systems – Broadband Networks; Heterogeneous Networks; Cognitive and Reconfigurable Networks; Converged Optical-Wireless Networks; Ad hoc and hybrid Networks

Optical Communications and Networking – WDM Systems; Radio over Fiber; Broadband access

Wireless Communications – WLAN; WiMAX, 3G and 4G systems; Radio Resource Management; Cognitive radio; Self-X solutions; UWB

Intelligent Transportation System – Traveller Information Systems; Telecommunications in Transportation; Vehicular Networks (VANETs); Transport Data Modelling, Fusion and Analysis; Safety and multimedia applications over VANETs; Middleware; Grid infrastructure and services for ITS

Healthcare – Telecommunications in Healthcare; Sensor Networks; Healthcare Computing and Information Systems; Grid Architectures and Services; Emerging applications and systems; Modelling tools and methods; Middleware

Crosscutting Themes – Internet Technologies, Infrastructure, Services and Applications; Open Source Tools, Open Models and Architectures; Security, Privacy and Trust; Navigation Systems, Location Based Services; Social Networks and Online Communities; ICT Convergence, Digital Economy and Digital Divide

Intelligent Transportation Systems



We have seen convergence of telephony and the Internet. ICT is converging rapidly into our lives and transportation at the moment seems to be the prime target of this convergence, i.e. Intelligent Transportation Systems (ITS). Conventional inductive loops are increasingly being used alongside mobile phones and GPS to devise efficient mobility solutions and what we see now is the convergence of mobile telephony, Internet and Transport infrastructure. Many factors are driving the growth of ITS

industry: congestion costs, energy usage, environment, deaths and injuries, health effects, mobility, safety and security are the major ITS drivers. Cooperative vehicle infrastructure systems are high on government agenda items. FCC has approved 75MHz of licensed bandwidth in the 5.9 GHz band for vehicle to vehicle and vehicle to infrastructure communications.

A number of projects are underway and hopefully ITS vision of vehicles talking to each other for reduced congestion

and improved safety will soon be a reality. However, the ITS community has to address plenty of challenges: aggregation and analysis of traffic data produced by the vehicles in real-time, network design for high speed nodes with rapidly changing topology, security, user privacy and business models are among the prime challenges.



Healthcare

Healthcare is perhaps the biggest services sector in many economies of the planet. However, healthcare industry has been relatively static compared to the rapid developments in ICT and peoples' changing, highly demanding, behaviours. Developments in science, engineering and computational biology has opened many new opportunities for customised and preventative healthcare but the healthcare delivery systems and channels have been unable to exploit these opportunities. ICT developments have led people to have higher demands for quality, value and customisation.

Ageing population have created another imbalance in demand and supply equation for the healthcare sector. Several well-known inefficiencies in the healthcare systems, such as multiple reactive treatment, rather than preventative, have further exacerbated the situation.

Healthcare is a service industry, it will increasingly be traded and offered on the Internet as we have seen many other services (marketplace, shopping) utilising the Internet. Many of the problems in health systems will be resolved by augmenting the healthcare industry

with a global Internet. Furthermore, Internet has increasingly become an accessible and influential medium between marketplace and consumers, and so it will lead to public adaptability and will resolve some of the social and operational challenges.

However, as the next generation healthcare systems go live on the global Internet, many new social and technical challenges such as privacy, trust, security, safety, and reliability will emerge.

The Global Networking Infrastructure has evolved from an infrastructure looking for networked applications into an infrastructure struggling to meet the social, technological and business challenges posed by multitude of bandwidth hungry emerging applications.

Future Internet infrastructure

The progress in the field of Future Internet infrastructure is crucial to support new bandwidth hungry applications and hence sustain the growth of the European knowledge based society. We envision ubiquitous data access to end users with bandwidth and connectivity adapting to specific application requirements and dynamically changing network and context conditions. The key challenges along the way that we have identified are i) Coexistence and cooperation of different access technologies, ii) Self-organization and reconfigurability of communication networks, iii) Converged optical-wireless systems and iv)

Control and management of service oriented plug and play next generation optical networks. The aim is to develop innovative solutions for cooperating wireless and optical communication systems in order to provide ubiquitous broadband access to end-users offering them seamless and adaptive connectivity in a cost-effective manner. Specifically, solutions towards flexible self-x network infrastructure for Future Internet are targeted. In our view, cognitive and reconfigurable paradigms are enablers towards true heterogeneous cooperating and coexisting communication systems, that eventually will merge

the properties of short-range with wide-area, mobile with fixed, wireless with optical into one underlying network infrastructure with only services and applications visible to the end-user.

This session will bring together top-notch scientists and engineers as well as industry representatives and government/EU officials to conclude the current status and future trends in the development of future Internet infrastructure technologies and techniques.



Open Models and Innovation Processes

This is a cross-cutting theme overarching all sessions including Internet Infrastructure, ITS, Healthcare and Digital Divide.

Much of the innovation in networked distributed systems, such as the Internet came from their decentralised and open development models. Many open source projects, directly and indirectly, opened the gates to the developments and innovations in science and engineering research. However, we have not really tried to understand, and capture the

opportunities offered by Open Models. With recession looming, it is becoming increasingly important that we give serious thoughts to our methods and ideals of doing business and developing economy.

In yesterday's slowly evolving business environment, innovation rendered a reward. Today, innovation is the only way to bring competitive advantage. Tomorrow, perhaps only those businesses will survive which infuse innovation into their fibre and are able to un-

derstand and innovate in an increasingly dynamic and complex environment.

This session will debate and explore the opportunities offered by Open philosophies and the challenges which it entails. We plan to create a lively debate around this theme involving the participants including opponents and the proponents of the Open philosophies and businesses.

