

Session Conclusions & EU-SK ICT Research Cooperation Perspectives

Session #1 – Sustainable & Personalized Healthcare

Chairs: Tanguy Verraes – Head of Unit H1, EC / Gyung-Leen Park – Professor, Jeju University

▪ **Potential EU-RoK cooperation in the field of e-Health**

- ✓ Synergies between European e-Health & Korean u-Health concept
- ✓ Interoperability of health systems & ICT tools for health sector
- ✓ Management of Medical Records / Electronic Health Records (e.g. ethical use, confidentiality, ...)
- ✓ Mutually recognisable certification system for Patient Safety

▪ **Taking on board the 7th EC Framework Programme: ICT Proposers' day in Budapest, 22nd Jan. 2009**

- ✓ ICT-2009-Call 4, deadline 1st April 2009

Personal Health System: €63M – Patient Safety: €30M

Int'l coop. on Virtual Physiological Human: €5M

- ✓ ICT-2009-Call 6, to be published for 24th Nov. 2009

Virtual Physiological Human: €63M

▪ **Remained questions & partial answers?**

- ✓ How a Korean potential partner can join a FP7 project?
- ✓ How a Korean potential partner may find/network with European partners?

ICT Proposers' day 2009, COJAK, EU Gateway Programme, European Training Programme, ...

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Session #2 – Future & Emerging Technology

Chairs: Wolfgang Boch – Head of Unit F1, EC / Yoon-seok Chang – Professor, Korea Aerospace University

- **DxB and System Beyond: convergence with IPTV and RFID technology**
 - ✓ Interoperability/standard wise, any issues for Collaboration Research?
 - ✓ Funding source? Government driven? Pure research?

- **The OCTOPUS project**
 - ✓ The FET area has been highlighted by a presentation about embodied intelligence, exemplified by the presentation of the OCTOPUS project
 - ✓ Aiming at enhancing the science and building a first soft-bodied robot with manipulation capabilities
 - ✓ Expected to lead to new foundations for new design principles
 - ✓ Area of potential collaboration between Europe and South Korea

- **USN based Monitoring System**

- **Multi-modal Interface based on Context awareness**

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Session #3 – Future Internet

Chairs: Per G. Blixt – Head of Unit F4, EC / Jae-Min Ahn – Project Manager, IITA

- **Collaboration on Future Internet research between Korea and EU is of mutual interest from both sides.**
 - ✓ First contact was already taken during the bilateral meeting in Seoul half a year ago.

- **During session #3, 7 speakers have presented their experiences on the Future Internet research and experimentation.**
 - ✓ The presentations include PlanetLab Korea, OneLab 2, PII, VITAL++, and LarKC.
 - ✓ They revealed the importance of large scale testbed and necessity of collaboration on the Future Internet research.
 - ✓ The need to transfer from IPv4 to IPv6 was also discussed.

- **EU is supporting Future Internet researches with in total 567M Euro during the period 2009-2010.**
 - ✓ Next call proposal will close on Nov. 3, 2009.
 - ✓ 50M Euro is allocated for FIRE (Future Internet Research and Experimentation).

- **Korea is supporting Future Internet research through academia projects and will extend the support to more elaborated level in the near future.**

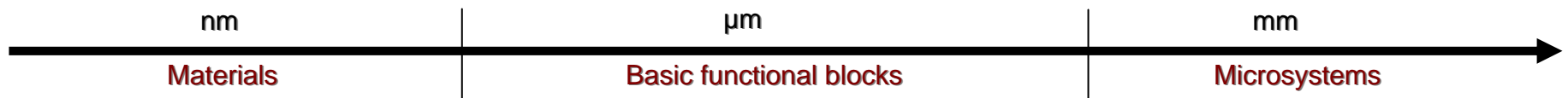
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Session #4 / #6 - Microsystems & Flexible, Organic & Large Area Electronics Part I, II

Chair: Augusto de Albuquerque – Head of Unit G2, EC

Microsystems integrates heterogeneous technologies to build new functions



▪ **Materials for ICT applications**

- ✓ Birefringent liquid crystalline materials for displays and optical devices

▪ **Sensors**

- ✓ Intelligent optical sensors for the measurement of temperature and strain

▪ **Microsystems**

- ✓ Micro-nano robots for bio-medical applications (intravascular therapy micro-robots, bacteria based robots, micro-robots for non-invasive surgery, micro-robots for endoscopy, ...)
- ✓ Flexible lab on chip
- ✓ Microneedles & microprobes with integrating functions (i.e. sensing ,dosifying)

▪ **Organic and Large Area Electronics**

- ✓ Printed smart flexible low-cost products integrating different functionalities (sensing, energy, communicating, memory, ...)

▪ **EPoSS, the European Technology Platform on Smart Systems Integration**

- ✓ Invitation to join

▪ **FP7 ICT Calls for proposals**

- ✓ Organic and Large Area Electronics <http://cordis.europa.eu/fp7/ict/organic-elec-visual-display> and Microsystems <http://cordis.europa.eu/fp7/ict/micro-nanosystems>

▪ **EU- Korea Cooperation**

- ✓ Two areas of existing cooperation (printed electronics and micro-nano robots) & expected increased cooperation on materials, sensors and µsystems

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Session #5 – Security and Trust in Networks and Services

Chairs: Jacques Bus – Head of Unit F5, EC / Heung-youl Youm – Project Manager, IITA

▪ Introduction by Heung-youl Youm (IITA-SK)

- ✓ Current status for the projects in progress in the area of information security by Korea was introduced together with the vision and objectives of these R&D projects covering three areas: infrastructure security, network security, and service security.
- ✓ We invite EU colleagues to collaborate in developing security technologies to counter emerging threats.

▪ Introduction by Jacques Bus (EC-EU)

- ✓ In FP7 the main research trust and security topics address the network infrastructure (Internet), services, Identity and privacy and certain technologies enabling this (Crypto, biometrics, ...).
- ✓ We invite our SK colleagues to cooperate with our projects through our “supplements action”, and in the coordination action INCO-TRUST.

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Session #5 – Security and Trust in Networks and Services (ctd)
Chairs: Jacques Bus – Head of Unit F5, EC / Heung-youl Youm – Project Manager, IITA

▪ **Security of the future Internet (Michel Riguidel, ENST, FR)**

- ✓ Emphasis in Europe on the Future Internet, including its security. We will have to deal with a new landscape, which needs upgrading, but also radical redesign.
- ✓ It is important to share our ideas on trust and security between the EU, US, Japan, Australia and South Korea.
- ✓ The Project IncoTrust invites cooperation and participation in a Workshop next year.

▪ **Botnet detection and response technology (Mi-joo Kim, KISA, SK)**

- ✓ Various evolution phases of the Botnet were presented and the best practice to counter the Botnet, called DNS sink hole, put in place in Korea was introduced.
- ✓ It is recognized that combating Botnet to Internet is very imminent considering the serious impact on Internet trust.
- ✓ We invite EU colleagues to collaborate in developing the intelligent response technologies to counter the Botnet.

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- **The EU research efforts on detecting and analysing emerging threats – WOMBAT and FORWARD (Engin Kirda, Eurocom, FR)**
 - ✓ With WOMBAT and FORWARD, the EU is funding research in detecting, analyzing and mitigating current threats such as botnets, worms, viruses and Trojan horses. Work aims at combating cyber-crime. WOMBAT and FORWARD are open to international participation with respect to data sharing, participation in working groups, workshops, etc.

- **Standardisation of home network security (Geon Woo Kim, ETRI, SK)**
 - ✓ The emphasize was on the standardization efforts for security of home network service done by ITU-T, especially, recent achievements including ITU-T X.1111, X.1112, X.1113, and X.1114 were introduced together with various threats and security requirements/mechanisms.
 - ✓ It is recognized that standardization activities should be carried out in alignment with R&D projects at the same time.

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Session #7 – Networked Media Systems

Chairs: Francisco Medeiros – Principal Scientific Officer Unit D2, EC / Jae-min Ahn – Project Manager, IITA

▪ Industrial initiatives (NEM ETP and ICT Testbed Island)

- ✓ Korea (Jeju island testbed) has supported various research projects in Networking, Broadcasting and Multimedia Applications
- ✓ The NEM (Networked & Electronic Media) Technology Platform has contributed to the preparation of the EU-funded FP7 ICT programme

▪ IPTV aspects

- ✓ Two presentations (Thomson and ETRI) addressed IPTV issues, including standardization and perspectives for the next generation of IPTV
- ✓ Potential collaboration in the area of “context-aware architecture” was identified; discussions are ongoing towards the preparation of a joint project proposal for Call 4

▪ Mobile multimedia aspects

- ✓ Two presentations (Tampere University and ETRI) dealt with mobile 3DTV and multimedia format issues
- ✓ Similar projects on mobile 3DTV were identified in the EU (MOBILE3DTV) and Korea (3D DMB)
- ✓ The two speakers will continue bilateral discussions towards further collaboration in response to Call 4

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Session #8 – Embedded Systems, Computing & Control

Chairs: Panagiotis Tsarchopoulos – Project Officer, EC / Yoon-deock Lee – Project Manager, IITA

- **Korean participation in running EU Networks of Excellence**
 - ✓ HiPEAC (Computing Systems) www.hipeac.net
 - ✓ ArtistDesign (Embedded Systems Design) www.artist-embedded.org
 - ✓ CONET (Cooperating objects) www.cooperating-objects.eu
 - ✓ HYCON (Hybrid Control) www.ist-hycon.org
- **Multi-objective design space co-exploration for embedded hardware and software platforms**
- **System-level modelling and simulation**
- **Flexible DMB/DAB(+) products**
 - ✓ standards and compatibility
 - ✓ new promising applications
- **Automated Testing of Embedded Software**
 - ✓ automobile embedded software
- **Ubiquitous Computing & Cooperating Objects**
 - ✓ test-beds & deployment

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Session #9 – Internet of Things

Chairs: Gérald Santucci – Head of Unit D4, EC / Peom Park – Professor, Ajou University

▪ Research priorities

- ✓ Smart Systems, energy sustainability, harsh environment and integration into materials
- ✓ Privacy, trust and security
- ✓ Innovative applications; logistics, retail, transport, medical, aeronautics, life sciences...

▪ From RFID to Internet-of-Things through Internet-of-Devices

- ✓ Smart devices and sensors, printable electronics, geo-location, Machine-to-Machine
- ✓ Properties of Things, connectivity, traceability...; characteristics of things, participatory, triggered by and trigger actions, intelligent, authoritative, transformative?
- ✓ Testbeds of IP-USN; ports and logistics

▪ One example of advanced applications, ubiquitous transportation system

- ✓ User-oriented, application of ubiquitous techniques, RFID-USN, wireless and mobile, Vehicle-to-Vehicle
- ✓ Real-time information service for drivers and transportation infrastructure managers
- ✓ Standards

▪ Areas of potential cooperative projects between Korea and Europe

- ✓ Technological components
- ✓ Architectures, architectural models, and applications
- ✓ Cooperation on strategic visions, research roadmaps, joint events

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Session #10 – ICT for Sustainable Growth

Chairs: Alvis Ancans – Scientific Officer Unit A4, EC / Sang-kil Lee – Team Leader, IITA

Converging areas of interest: Green Growth Strategy (Korean National Commission on Sustainable Development); RFID for Environmental Lifecycle Management of ICT Devices (ETRI), Fighting Climate Change (EU), ICT for Energy Efficiency (EU), Environmental Applications with the use of RFID and Internet of Things.

Common challenges: how to improve growth whilst addressing environmental challenges, ie, sustainable growth.

▪ Importance of well planned privatization

- ✓ Well designed regulation is much more important than competition; After the privatization, competency of company drop dramatically

▪ Use of ICT to reduce CO2 emissions:

- ✓ share resources, networks with less sites, use intelligent services
- ✓ 5 billion people connected by 2015, 100X traffic growth, requires environmental responsibility
- ✓ 3% of world energy consumed by ICT infrastructures (2% of worldwide CO2 emissions generated by ICT)

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Session #10 – ICT for Sustainable Growth (ctd)

Chairs: Alvis Ancans – Scientific Officer Unit A4, EC / Sang-kil Lee – Team Leader, IITA

▪ **Green ICT as a business model**

- ✓ Green ICT has been issued for CSR. But green ICT is a comprehensive program to reduce cost and increase productivity
- ✓ SK Telecom try to reduce carbon dioxide and reduce energy consumption at office
- ✓ But, finding business model for sustainable growth for private company is still difficult issue

▪ **Direct business linkages and cooperation among R&D institutions of Europe and South Korea is fundamental**

- ✓ Korea boasts dynamic economy, openness of industrial research

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Session #11 – eInfrastructures

Chairs: Enric Mitjana – Scientific Officer GEANT & e-infrastructure, EC / Seung Ku Hwang – Vice President of Mobile Telecommunications Research Division, ETRI

- **Gave example of ongoing successful collaboration on ICT-based Infrastructures (eInfrastructures) the:**
 - ✓ TEIN: network layer
 - ✓ EGEE: grid services
 - ✓ WISDOM: application in the science domain

- **Created opportunities for future cooperation possibilities**
 - ✓ Involvement on ongoing projects activities
 - ✓ eInfrastructure call5 (objecting 17. 03. 09) and a topic on international aspects
 - ✓ OGF#25/EGEE forum 2-6 March 2009
 - ✓ Studying sustainability of eInfrastructure
 - ✓ Collaboration in area of High Performance Computing (HPC)

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