Joint Research Centre

Ambient Intelligence: The European way for a user-friendly Information Society

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Structure of the JRC

Joint Research Centre

7 Institutes in 5 Member States

IRMM – Geel, Belgium
- Institute for Reference Materials and Measurements

IE – Petten, The Netherlands
- Institute for Energy

ITU – Karlsruhe, Germany
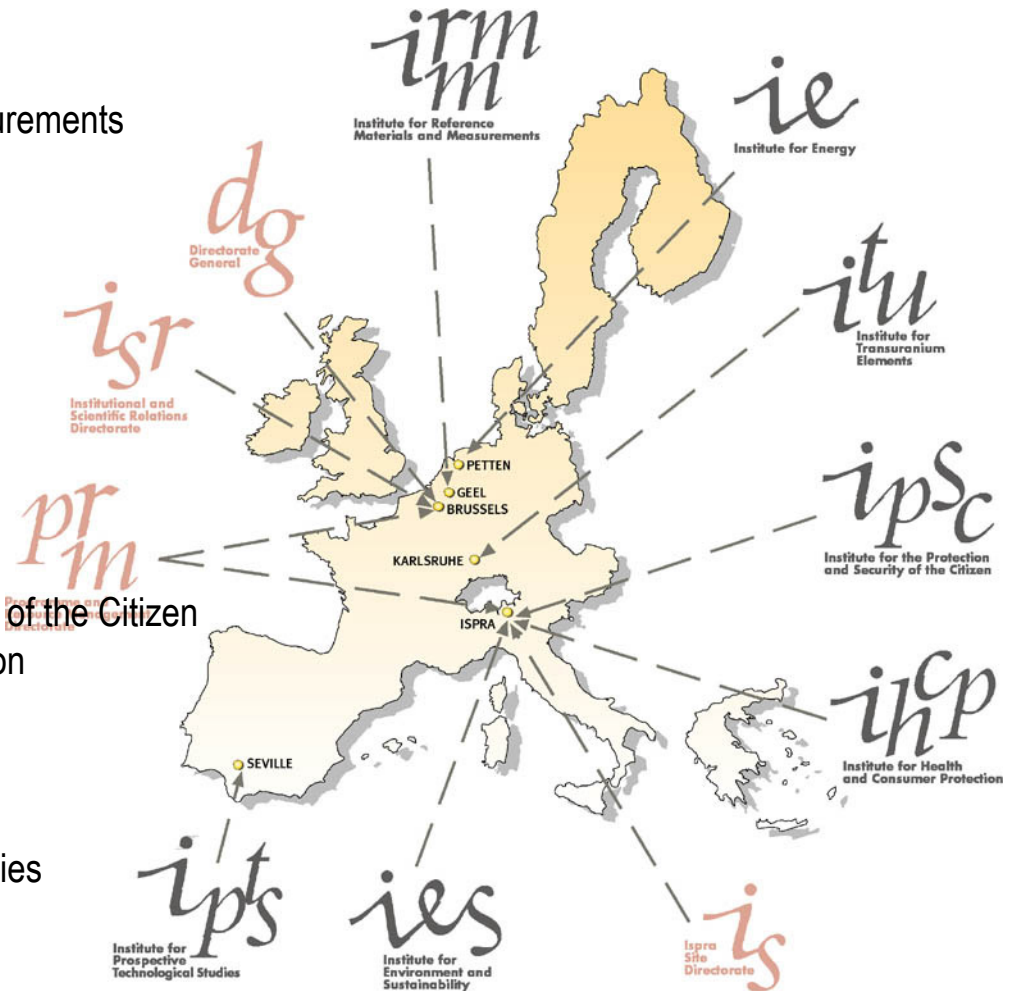- Institute for Transuranium elements

IPSC - IHCP - IES – Ispra, Italy
- Institute for the Protection and the Security of the Citizen
- Institute for Health and Consumer Protection
- Institute for Environment and Sustainability
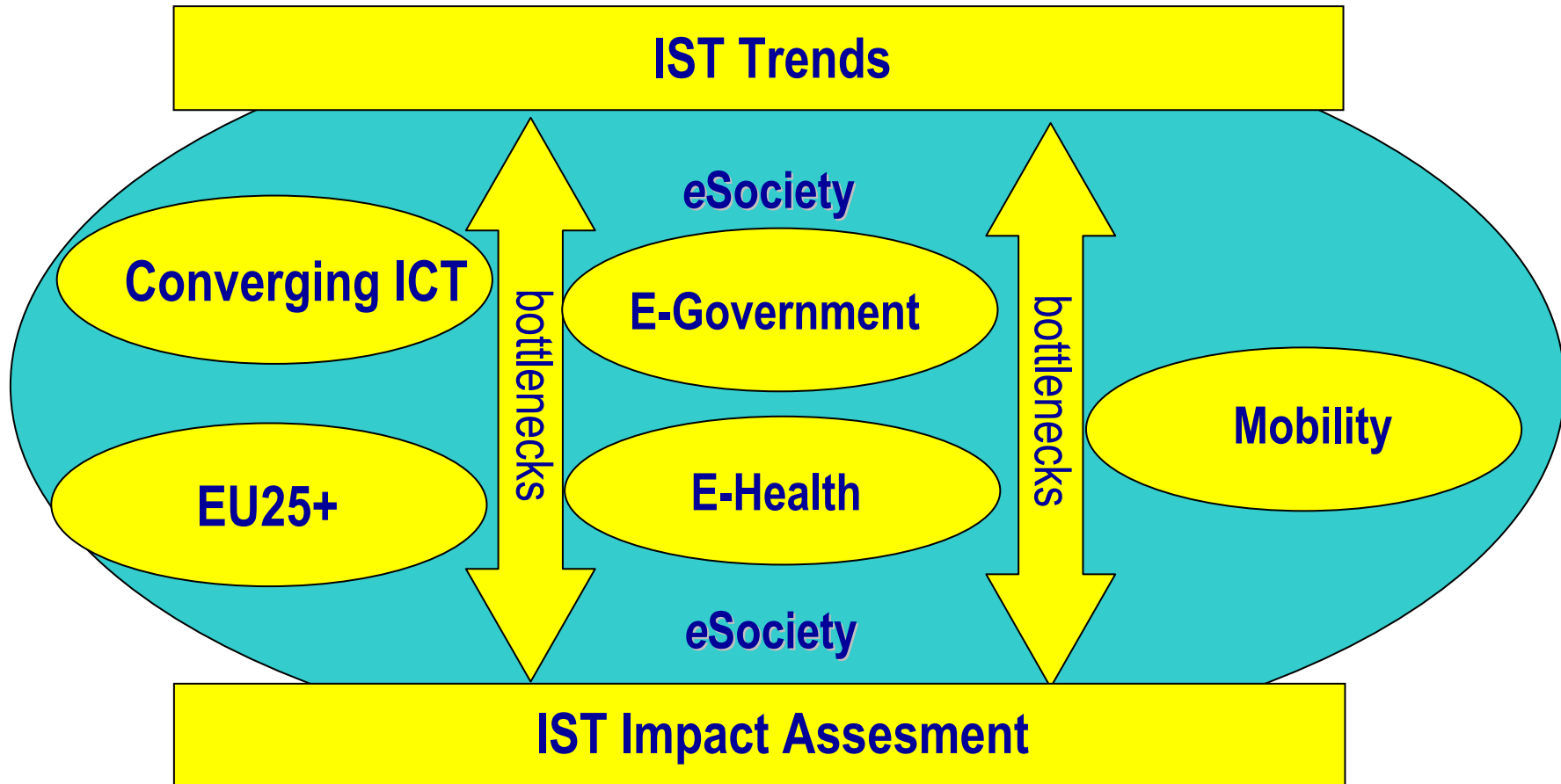
IPTS – Seville, Spain
- Institute for Prospective Technological Studies

IPTS mission: to provide scientific grounded, prospective techno-economic analysis in support of European policies and decision-making

Objective

➢ **Discuss AmI as key vision for IST research and policy in Europe**

➢ **Raise challenges and bottlenecks for its realisation**

➢ **Explain why an Everyday Life perspective is important**

Introducing the AmI ISTAG Vision

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AmI Intro

➢ **Computing power becomes so cheap & small, seamless interoperable & easy to use => application in all aspects of everyday life**

➢ **Convergence of Ubicomp, Ubiquitous Communication & Intelligent User-friendly Interfaces**

Evolution ISTAG Vision

ISTAG Vision Statement for FP5 (1999); ISTAG/IPTS Scenarios for AmI in 2010 (2001); ISTAG FP 6 priorities (2002); ISTAG from vision to reality (2003); ISTAG 2004 Reports: www.cordis/lu/ist/istag

➢ **1999: Develop a longer term vision of the challenges and opportunities for sustained global competitiveness of the European IST industry circa 2010**

➢ **2000 Lisbon objectives: competitive knowledge society that is socially inclusive and sustainable by 2010**

➢ **2002 onwards (FP6): Addressing challenges to the European model (growth, cohesion, enlargement, aging population) (Cf. Jeremy Rifkin, The European Dream, 2004)**

➢ **2004: an accepted paradigm for IST research**
   ▪ **38.500 Google links on "Ambient Intelligence" (non-grouped >200K)**
   ▪ **Amazon.com: Hundred of books on AmI (partly or entirely) (28 in title only**

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ISTAG Vision: human-centred computing

New approach to IST innovation in Europe

- ➢ **EU RTD: from FP4 (Acts, Esprit, telematics) -> FP5 user-friendly IS -> FP6 AmI**

- ➢ **Top down / Technology push -> Bottom up demand -> Integrated & Systemic**

- ➢ **Mainframe -> PC -> Multiple Comp Devices per person -> AmI / Ubicomp**

- ➢ **Technology -> background & User -> foreground**

- ➢ **Support of human actions (<-> people adapting to machines)**

- ➢ **Efficient and context-aware; pro-active but under control**

- ➢ **User empowerment**

Vision puts a huge and explicit claim on being 'non-technological' !!!

AmI is exactly foreseen to bridge / merge human and machine

From vision to reality…

➢ **AmI is at core of IST FP6 program and of other RTD programs (public and private)**

➢ **It is being elaborated in dedicated fields (ISTAG 2002)**

- **Ami in the home, the car, the personal environment, the enterprise, S&T**

- **In health, government, education, business, etc.**

- **Seamless interoperability between environments: Aml Space**

➢ **ISTAG 2003/2004: Experience and Application Research Centres**

- **New approach to user-oriented design & prototyping (e.g. living labs)**

- **Usability, design for all, e-inclusion**

- **Not only functionalistic design strategy (HCI; CMC, CSCW)**

=> **New approach to IST research by taking into account users in the micro-social context of their everyday lives**

Different levels of user-oriented design

ISTAG 2004 on EARCs:

Timeline

1. **Science & Technology Centres**

    - **Basic research on component technologies**

    - **Little user involvement**

    - **Small scale user research, e.g. with peers**

2. **Feasibility and Usability Centres**

    - **Adapt the technologies and systems to real user environments & real users**

    - **Small scale user studies & usability tests**

    - **E.g. Living Labs**

3. **Demonstration and Evaluation Centres**

    - **Testing of prototypes into large scale demonstration facilities**

    - **Large scale user research**

    - **E.g. smart home demonstrators ('Living Tomorrow')**

4. **Field trials and longer term studies**

    - **Small and larger scale studies of how users are dealing with the technologies**

    - **In different real-life environments (E.g. smart neighbourhoods)**

    - **Both small scale and large scale**

Lessons from an Everyday Live perspective

- ➢ **Sociologically oriented User research (qualitative/ethnographic)**
    - **Focus on acceptance, resistance, use and non-use of ICTs**
    - **Domestication approach**
    - **Everyday shaped by structural differences and inequalities in terms of gender/age/class/ethnicity**

- ➢ **Everyday computing and housework (cleaning, washing, ironing, etc.)**

- ➢ **Intelligent agents as social actors: context-awareness <-> neutrality**

- ➢ **Physical versus mental disappearance of computing: control**

- ➢ **AmI dilemma and privacy/security**

To conclude

Past

➢ AmI vision strong, encompassing vision for future of IST in Europe

➢ ISTAG AmI vision has evolved, although from the start, the discourse was human-oriented, not technology deterministic (within IST program…)

Present

➢ From vision (mobilisation) to reality

➢ Need for inter-disciplinary research acknowledged (EARCs)

➢ Need for "real" user-involvement (design) acknowledged (EARCs)

Time to act

➢ Bring "everyday computing" and "the everyday" closer together

➢ Concrete applications relevant for Europe

➢ Large and small scale user & business testing and experimentation

➢ Discus ethical questions, privacy-security, societal needs from an everyday life perspective -> possibly provide new views on these topics

➢ Dedicated efforts needed in advancing insights on user-involvement

Thank you !

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