ARU New Project Portfolio 2006

Martti Mäntylä

HIIT/ARU

HIIT Research Programmes

- To facilitate the convergence of the operations of the two units as required by the HIIT strategy roadmap, their present research programs will be merged
  - The two directors will make a joint proposal to the Board on the new merged programmes during Fall 2005
- Thus, from 2006 onwards there will be no separate research programmes for ARU and BRU; all programmes are HIIT programmes
- In 2006, one new programme is possibly launched through a transparent process
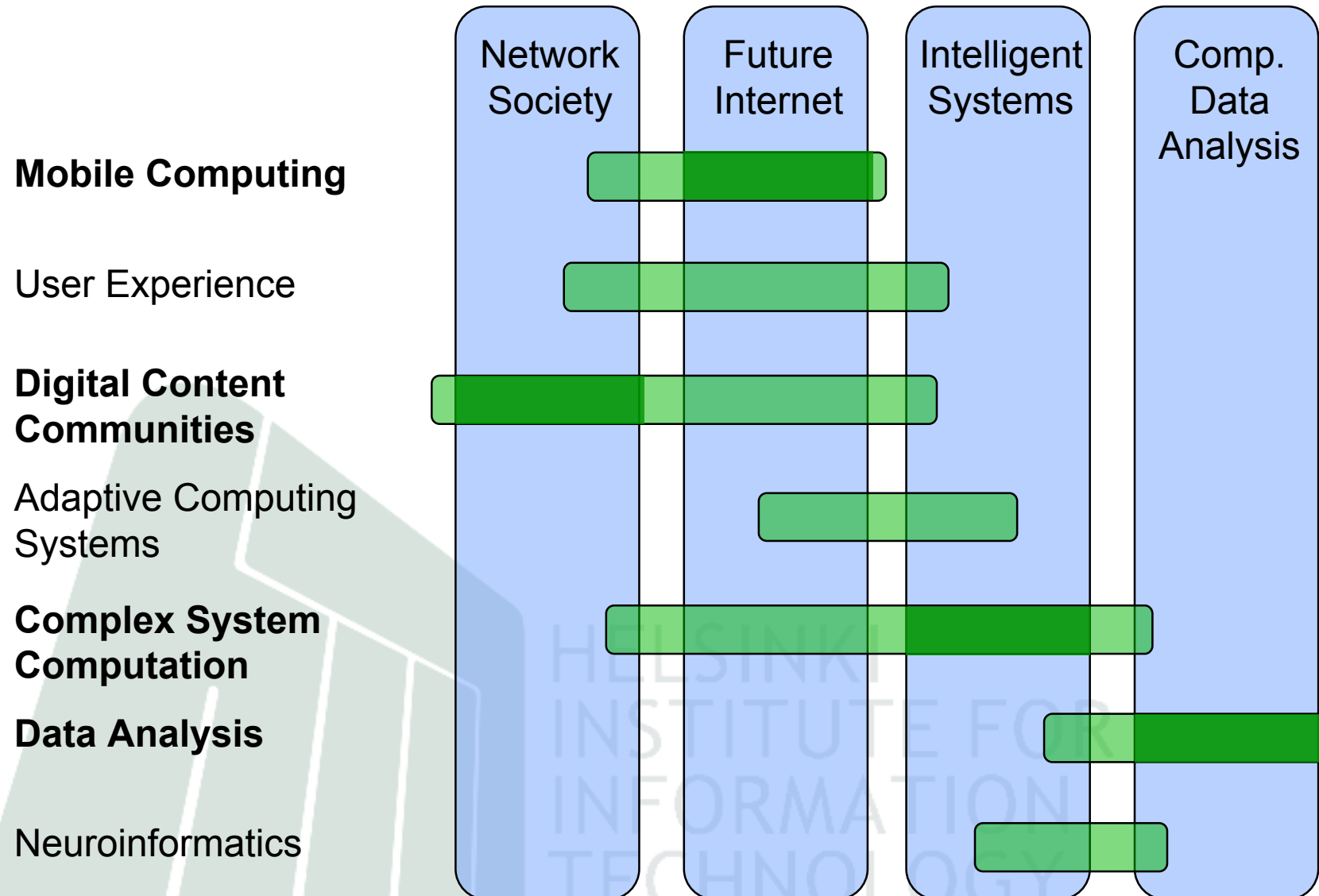
Present Structure

- ARU: three programmes
  - Fuego: Future Internet
  - Intelligent Systems
  - Network Society
- BRU: three research areas
  - Adaptive Computing
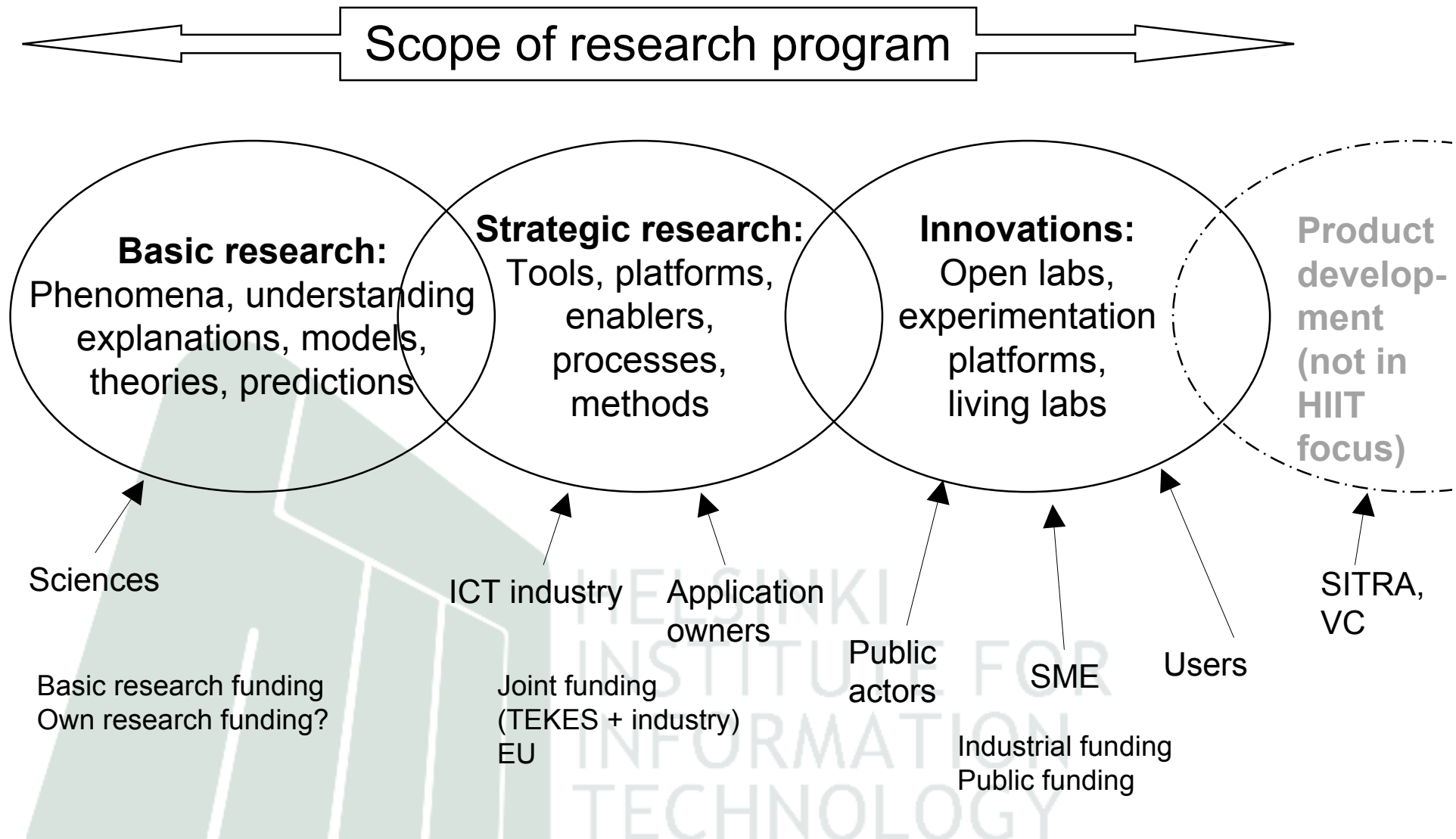 - Data Analysis
  - Neuroinformatics

Future Structure

- Network Society (core group: Digital Content Communities)
  - present Network Society
- Future Internet (core group: Mobile Computing)
  - present Fuego (ARU) + Adaptive Computing Systems
- Intelligent Systems (core group: Complex System Computation)
  - present Intelligent Systems + Neuroinformatics
- Computational Data Analysis (core group: Data Mining)
  - present Data Analysis

Program-Group Matrix

	Network Society	Future Internet	Intelligent Systems	Comp. Data Analysis
Mobile Computing				
User Experience				
Digital Content Communities				
Adaptive Computing Systems				
Complex System Computation				
Data Analysis				
Neuroinformatics				

Methodology

Scope of research program

Basic research:
Phenomena, understanding
explanations, models,
theories, predictions

Strategic research:
Tools, platforms,
enablers,
processes,
methods

Innovations:
Open labs,
experimentation
platforms,
living labs

**Product
develop-
ment
(not in
HIIT
focus)**

Sciences

ICT industry   Application
owners

Public
actors

SME   Users

SITRA,
VC

Basic research funding
Own research funding?

Joint funding
(TEKES + industry)
EU

Industrial funding
Public funding

HIIT Open Lab

SME
"Hackers"

Communities
Government,
cities

Open
development

Open
innovation

Open
platform
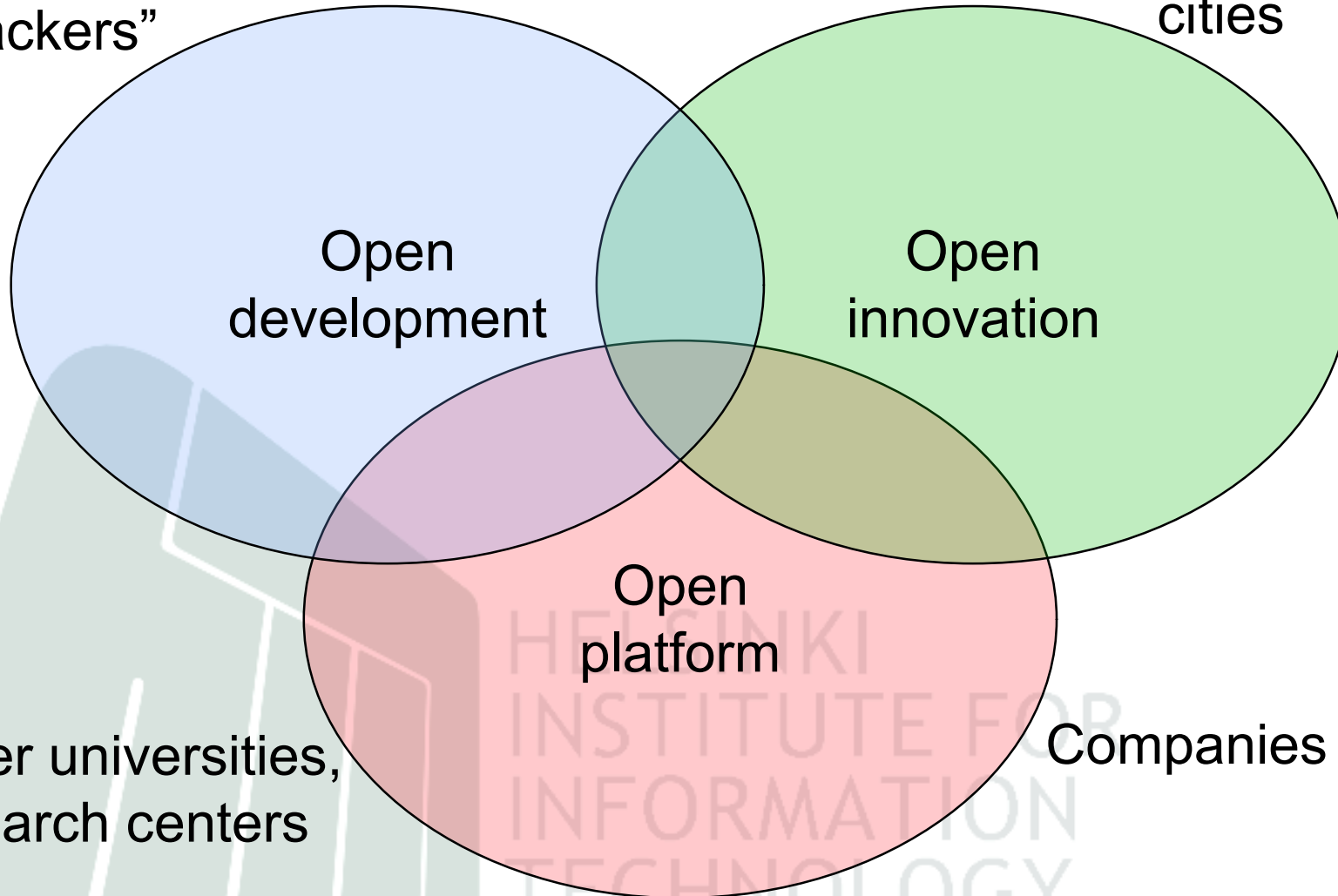
HIIT
Other universities,
research centers

Companies

Opportunities

- EU FP6 IST 5th Call 21.9.2005
- TEKES LIIKE 2nd round, 30.9.2005
- TEKES VAMOS call, 7.10.2005
- TEKES ICT Strategic Basic Research 2nd round, 14.10.2005
- NordUNET3 Research Programme, 15.10.2005
- TEKES GIGA call, 18.11.2005
- TEKES Experience Industry, early 2006??
- TEKES open call, no firm deadline but preferably by end of 2005

Initiatives

- EU IST 5th Call
  - Media@Work (Timo Saari)
  - Mobilife 2 (Esko Kurvinen, Martti Mäntylä, Patrik Floreen)
  - CALLAS (Giulio Jacucci)
  - P2P-FUSION (Tommo Reti)
  - ePerSpace (Ken Rimey)
- EU NEST
  - FUGA (Timo Saari)
- TEKES Liike
  - Mobile Format Business (Vili Lehdonvirta, Martti Mäntylä with Ilpo Kojo, CKIR)

Initiatives

- TEKES Fenix:
  - MUPE (Marko Turpeinen)
- TEKES Vamos:
  - Workplace Management for Mobile Work (Antti Salovaara, Martti Mäntylä)
  - MoveOn (Antti Oulasvirta with Antti Nurminen, TKK)
  - mBlogging (Marko Turpeinen)
- TEKES ICT Strategic Basic Research
  - Community Media and Service Oriented Architecture, COMSOA (Marko Turpeinen)
- NORDUNET 3 Programme
  - NordicHIP (Andrei Gurtov)

Initiatives

- TEKES GIGA:
  - Strategic research initiative (Kimmo Raatikainen et al.)
  - Multiaccess Experimentations in Real Converging Networks (Andrei Gurtov)
  - Cognitive Radio (Martti Mäntylä, Antti Oulasvirta et al.)
- TEKES Experience Industry
  - Emeritus (Marko Turpeinen)
  - Mobile Metadata for Spontaneous Travelers (Antti Oulasvirta with Marja-Riitta Koivunen, W3C)

Initiatives

- TEKES Open Call
  - CIPAR (Mauri Kaipainen)
  - Eulice (Antti Oulasvirta, Olli Pitkänen)

Multiaccess Experimentations in Real Converging Networks (MERCoNe)

- Raimo Vuopionperä, Mervi Ranta, Jouni Korhonen, Andrei Gurtov, etc.

- Focus: Semi-continuation of VHO project. Testing (of HIP) in live networks, participation to standardization, transport protocols, performance evaluation.

- GIGA Tekes call

- Partners: Ericsson NL, TSF, HIIT, TKK, UH, …

- Duration: 2 years

- Tentative budget of HIIT: 200 000 €/year

NordicHIP

- Andrei Gurtov, Martti Mäntylä, Bengt Ahlgren, Antti Ylä-Jääski
- Focus: Serve as a collaboration tool for national HIP activities by supporting mutual visits, summer schools, and some core technical work on Internet architecture, IPv4/v6 co-existence and naming infrastructure
- NORDUNET3 call
- Partners: HIIT, TML, SICS
- Duration: 4 years
- Tentative project budget: 170 000 €/year

Location Privacy and Authentication in Massively Distributed Systems

- Andrei Gurtov, Klaus Wehrle
- Focus: Fund researchers' short visits of few months to Germany. German visitors to HIIT are funded by DAAD. Technical focus is on location privacy, Denial-of-Service robustness of HIP
- Finnish Academy of Science
- Partners: HIIT, Tübingen TU
- Duration: 2-3 years
- Tentative budget of HIIT: 20 000 €/year

Trustworthy Internet

- Martti Mäntylä et al. (TBD)
- Focus: The project will study how a more trustworthy Internet can be built on the existing IP infrastructure adding security and mobility as a light overlay infrastructure. It will create prototype technologies, platforms and solutions; perform experiments; influcence the standardisation of the field; and contribute to researcher education.
- GIGA strategic research call
- Partners: HIIT, TKK, UH
- Duration: 3 + 2 years
- Tentative budget: 500 000 €/a

Cognitive Radio

- Antti Oulasvirta et al. with radio experts
- Focus: Study whether probabilistic models created on the basis of qualitative data from user studies can be used to manage radio resources as required by the concept of "cognitive radio"; build simulations and prototypes; perform experiments
- GIGA call?
- Partners: HIIT, TKK Radio Laboratory (?)
- Duration: 2 years
- Tentative project budget: TBD

Context Cues:
Context data derived situation cues to support meaningful interactions

- Antti Oulasvirta with FDK/BRU (Toivonen) and Sakari Tamminen (HY/Social psychology)
- Academy of Finland open call
- Focus: The project will study how users infer and act upon automatically inferred and delivered "situation cues" of other people in awareness applications
- Partners: BRU
- Duration: 4 years
- Tentative budget: ~100 000 €/year

Mobile Metadata for Spontaneous Travellers

- Antti Oulasvirta with Marja-Riitta Koivunen (W3C, Annotea) and Santtu Toivonen (VTT)
- TEKES Experience Industry
- Focus: The project will study uses of mobile annotations, context-aware messaging and commercials in the context of travelling and hiking
- Partners: VTT
- Duration: 2-3 years
- Tentative budget: ? €/year

Move On:
Application platform for location-based services in public transportation

- Antti Oulasvirta with Antti Nurminen (INIT-Lab/TKK)
- TEKES Vamos
- Focus: The project will study through three UCD cases possibilities for developing a service platform for location-based services in public transportation
- Partners: TKK
- Duration: 2 years
- Tentative budget: ? €/year

Workplace Management for Mobile Work

- Antti Salovaara, Martti Mäntylä
- TEKES open call
- Focus (project level): In a science park context, solutions for construction companies and their customers to manage real estate and IT resources
- Focus (HIIT level): Prototyping the solutions and trying their practical viability by carrying out field trials.
- Partners: Construction Economics and Management Laboratory (HUT, project leader), NCC, others
- Duration: 4 years
- Tentative budget: 1M EUR has been discussed

Virtual Consumerism

- Vili Lehdonvirta, Kai Kuikkaniemi, Fernando Herrera, Mikael Johnson (SoberIT), et al.
- Tekes FENIX / Tekes Experience Industry
- Focus: The project will study new consumer behaviour emerging around game items and other *virtual assets* often traded for real money, with a view to identifying implications on marketing, branding and design, and recognising potential business opportunities.
- Partners: SoberIT (others TBD)
- Duration: 3 years
- Tentative budget: 250 000 €/year

COMSOA
Community Media and Service-Oriented Architecture

- Matti Rantanen, Tommo Reti, Marko Turpeinen
- TEKES Strategic Basic Research (100% funding)
- Focus: Service-oriented computing (SOC): autonomous, platform-independent computational elements that can be described, published, and discovered using standard protocols and service metadata. Combining dynamic and probabilistic modelling of social networks and user-centric product concept design (UCPCD) with service-oriented computing.
- Partners: industry partners, MIT Media Lab
- Duration: 2 years
- Tentative budget: 320,000 €/year

M-Blogging

- Marko Turpeinen, Matti Rantanen, Herkko Hietanen, University of Tampere (Journalism Research Centre / Hypermedia Lab)
- TEKES VAMOS
- Focus: Motivations and cultures of blogging, possibilities of blogs and wikis in the contexts of work organizations, mobile open content, value chains of possible media uses and business services.
- Partners: media companies, application providers
- Duration: 3 years
- Tentative budget: 100,000 €/year

Emeritus

- Marko Turpeinen, HUT/SoberIT
- TEKES, other funding sources
- Focus: Developing meaningful roles, services and tools for seniors to be active in their professional communities after retirement age. How could new network-supported community technologies facilitate this?
- Partners: Finnish industry partners, public service authorities
- Duration: 3 years
- Tentative budget: 200,000 €/year

MUPE
Multi-User Publishing Environment

- Janne Vuorenmaa, Kai Kuikkaniemi
- TEKES
- Focus: Context-aware multi-user mobile application platform. New and emerging technologies to make the platform more versatile and approachable for developers.
- Partners: Nokia Research Center, Lappeenranta Technical University, Tampere Technical University, VTT
- Duration: 2,5 years
- Tentative budget: 80,000 €/year

Eulice
End-user License Expectations

- Antti Oulasvirta, Olli Pitkänen, Martti Mäntylä, Jukka Kemppinen, …

- Tekes Open Call

- Focus: The project will accomplish *an empirical study of people's belief systems* related to license agreements; *a legal study to analyze standard terms*, their interpretation, and ways to improve them; and *a constructive study to decrease the gap* between beliefs and terms by the means of technology design

- Duration: 2 years

- Tentative budget: 125 000 €/year

Mobilife 2

- Esko Kurvinen (Martti Mäntylä), Patrik Floreen
- EU IST 5th Call
- Focus: Develop new service architectures and concepts and new service engineering methods to enable the widespread innovation of new services and applications, their easy development and fast take-up and management. Through this, bring latest advances in services and applications within the reach of mobile users in their everyday life.
- Partners: Nokia coordinates a consortium of 25 partners
- Duration: 2 years from 1.9.2006
- Tentative budget: 200 000 €/year

Media@Work

- Timo Saari, Marko Turpeinen, Giulio Jacucci
- EU IST 5th Call, IP, "Collaborative Working Environments"
- Focus: Open rich media content process (wiki-like systems for presentations, audio and video), serious multi-player gaming platforms for innovation, idea management
- Partners: Univ. of Bremen coordinates a consortium of 23 partners; HIIT, HSE/CKIR and Nokia from Finland
- Duration: 3 years
- Tentative budget: 400,000 €/year

P2P-Fusion

- Tommo Reti
- EU IST 5th Call, STREP, "Access to and preservation of cultural and scientific resources"
- Focus: Creative reuse of audiovisual works by selected Content Communities. Created digital media is made available through heterogeneous network environments (such as P2P) using the DiMaS platform for controlled digital media distribution management.
- Partners: UIAH Helsinki coordinates the research; 8 partners
- Duration: 3 years
- Tentative budget: 140,000 €/year

ePerSpace II

- Ken Rimey
- EU IST
- HIIT Focus: distributed data management in the home.
- "The main objective of ePerSpace is to significantly increase the user acceptance of networked audiovisual systems and applications at home and virtually anywhere by developing innovative interoperable and personalised value-added networked services."
- Partners: France Telecom, et al. (Discussions in progress on HIIT joining the consortium.)
- Duration: 2 years
- Tentative budget: 2 py/y