WISEciti

Wireless Community Services for Mobile Citizens

Public Seminar
May 7, 2009

WISEciti project is a joint research initiative between

WISEciti Structure

- ## WP1: Services and Economic Models
  - *Studies the service and economic models relevant for WISEciti and addresses selected topics emerging from the technical work packages in the business and service development and the micro-economic point-of-views. In the business side, the key aspects are analyzing the business networks and market structure behind mobility-enabled network architectures and protocols*

- ## WP2: Network Infrastructure
  - *Focuses on further development and deployment of the Host Identity Protocol (HIP) architecture and its components. Also implements required support for a globally accessible HIP network infrastructure for setting up a HIP-based public Internet piloting environment in a number of locations, especially those with free wireless access*

WISEciti Structure (cont'd)

- ## WP3: Network Connectivity in Mobile Environment
  - *Focuses on challenges encountered by mobile host while establishing and maintaining the network connectivity in a mobile environment. This involves problems and challenges related to end-to-end connectivity that stems from link-level connectivity to application/service level connectivity*

- ## WP4: Optimizations and Management
  - *Focuses on optimizations in resource control, traffic congestion and rate control, and development of virtual network management infrastructure and secure name resolution mechanism*

- ## WP5: Coordination and Dissemination
  - *Coordinates various activities common to all work packages, including network measurement and experimentation work, demonstration and dissemination, external relations and standardization efforts*

WP1 - Main Topics

- Analysis of the business networks and market structure behind mobility-enhanced network architectures and protocols developed in other WPs within WISEciti project

  - *Presentation in the seminar*

- Analysis of the significance, consequences and deployment directions of HIP VPN for service providers

- Gain understanding of existing community services by collecting scenarios on community services

- SSUR models produced and used in brokering

  - *Poster in the seminar*

- Support the deployment and piloting of the technologies developed within the WISEciti project into various access networks

WP2 - Main Topics

- HIP multiaccess mobility for legacy terminals
  - *Demo in the seminar*
- Distributed user authentication in wireless networks and source address validation architecture
  - *Demo and presentation in the seminar*
- Performance evaluation of existing IP security and mobility mechanisms on lightweight hardware
  - *A research paper and a licentiate thesis to appear*
- An openly accessible HIP network infrastructure in an Internet subdomain
  - *Demo and poster presentation on HIP animation in the seminar*
  - *Demo on HIP-based mobile video streaming in the seminar*
  - *Presentation on HIP based VPN mobility in the seminar*

WP3 - Main Topics

- Effect of vertical handoffs on TCP
  - *Presentation and poster in the seminar; journal/conference papers and PhLic thesis published*

- Middlebox Interactions
  - *Poster presentation in the seminar*

- Solutions for monitoring of multi-access flows

- Multi-access services and virtualization

- Application architecture and APIs for multi-access terminal
  - *Presentation, demo and posters in the seminar*

- Distributed mobility management signaling architecture and mechanism
  - *Demo and poster in the seminar; journal/conference papers published*

- Prototypes/proof of concept implementations and Experimentations

- GSMA: 3G in Notebook Guidelines
  - *Version 3.0 ready*

WP4 – Main Topics

- Secure Name Resolution - How to utilize cryptographic identities in securely mapping identifiers to locators?
  - *Poster in the seminar*

- Congestion and rate control with future traffic and protocols
  - *Poster in the seminar*

- Cross-layer assisted vertical handoffs for transport protocols
  - *Presentation and poster in the seminar; journal/conference papers published*

- Experimental study of back-off algorithms
  - An adaptive back-off model proposed, simulations performed with the back-off schedule algorithm for Ethernet MAC
  - *A conference paper to appear*

WP4 – Main Topics (cont'd)

- Development of decision making algorithms for automatic policy selection to improve mobility and resource management
  - *Presentation in the seminar*

- An implementation of an advanced simulation environment for experimentation with secure handovers in localized administrative domains
  - *Poster in the seminar*

Project Results Dissemination

- List of Publications available at
  - http://www.cs.helsinki.fi/group/wiseciti/publications.html
- Scientific Publications
  - 3 journal papers
  - 8 conference papers
  - 2 conference posters
  - 4 theses (2 Doctoral, 1 Licentiate, 1 BSc)
- Two Demos
- Standardization Contributions
  - IETF: 6 RFCs; 11 Internet Drafts
  - IEEE 802.21 and 3GPP contributions (+GSMA)
- Software Releases
  - E.g., HIP related code and Linux TCP development

Seminar Programme

12:00 Coffee & Refreshments

12:30 Opening Session

Welcome
- *Göran Pulkkis, Arcada*

Introduction
- *Tony Jokikyyny, Ericsson &*
  Markku Kojo, University of Helsinki

13:00 Presentations

Trust in Internet: Issues and Incentives
- *Mikko Särelä, Ericsson*

HIP based VPN Mobility
- *Göran Pulkkis, Arcada*

Distributed User Authentication in WLANs
- *Dmitriy Kuptsov, HIIT*

Cross-layer Assisted Vertical Handoffs for TCP
- *Laila Daniel, University of Helsinki*

Systematic Analysis of Ubicomp Services
- *Mervi Ranta and Henrik Asplund,*
  TKK/PM&RG

14:00 Demos

SAVAH: Source Address Validation Architecture
with HIP *(HIIT)*

Mobile Videostreaming *(Arcada)*

HIP Animation *(Arcada)*

HIP Proxy: Multiaccess Mobility for Legacy
Terminals and Subnetworks *(Ericsson)*

Distributed Mobility and Resource Management
(VTT)

Case study: Ämppäri *(TKK/PM&RG)*

14:00 Posters
- 12 poster presentations

16:00 Seminar ends