Mobility, Privacy and Networks in an urban context

Priva'mov - Urbanet
Urbanet – Urban Networks


Cross-layer solutions taking into account several Quality of Service (QoS) levels.

Self-configuration and networks autonomy minimizing experts intervention.

Smart aggregation and distribution of data improving performance and reducing energy consumption.
Understanding urban mobility

How people move within an urban context. What kind of transports are used. How people use the network depending on their location and activity.

The cellular network is more and more jammed. As a consequence, it is compulsory to identify the sensitive points in the network, in order to analyze if other technologies could offload the data.

The understanding of urban mobility will help to validate the solutions offloading the cellular network (cost of technologies handover, interest of caching).
Priva'mov: Architecture

The aim of the Priva'Mov project is to develop and deploy a crowdsensing platform to collect mobility traces from a sample of real users equipped with android tablets while carrying research on privacy preservation issues.

100 smartphones with a collecting app.

One server to collect data.

One server to visualize data.
Priva'mov: Mobility analysis

2 experimentations realized, 3rd is in progress.

Low GPS frequency and simple interpolations provide low errors compared to continuous tracking and reduce energy consumption.

Several sensors, different research topics imply a wider spectrum of applications and a better understanding of users mobility.
Application domains

Geolocation applications: low-energy consuming, privacy respectful, crowd data.

Fitted transport services: Adapt infrastructure and frequency to citizens needs.

Adapted network deployments: Knowledge of data consumption to optimize resource usage.

Urban mobility models.
Next steps

Correlation between low-energy consuming sensors and location accuracy.

Trade-off analysis

- Quality of Experience vs privacy
- Which kind of data for which service provided

How to prefetch network information for enabling localization without disclosing it to a provider?

Looking for partnerships with companies
Thank you

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