

Mobile Agent Communication in Wireless Networks

Heikki Helin

Sonera Ltd.

(heikki.j.helin@sonera.fi)



Heimo Laamanen

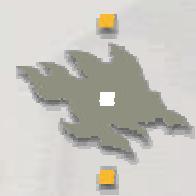
Sonera Ltd.

(heimo.laamanen@sonera.fi)

Kimmo Raatikainen

University of Helsinki

(kimmo.raatikainen@cs.helsinki.fi)



presentation outline

- Definition of an agent
- Agents and agent communication in wireless environment
- Optimizing agent communication
- Agent migration
- Conclusions



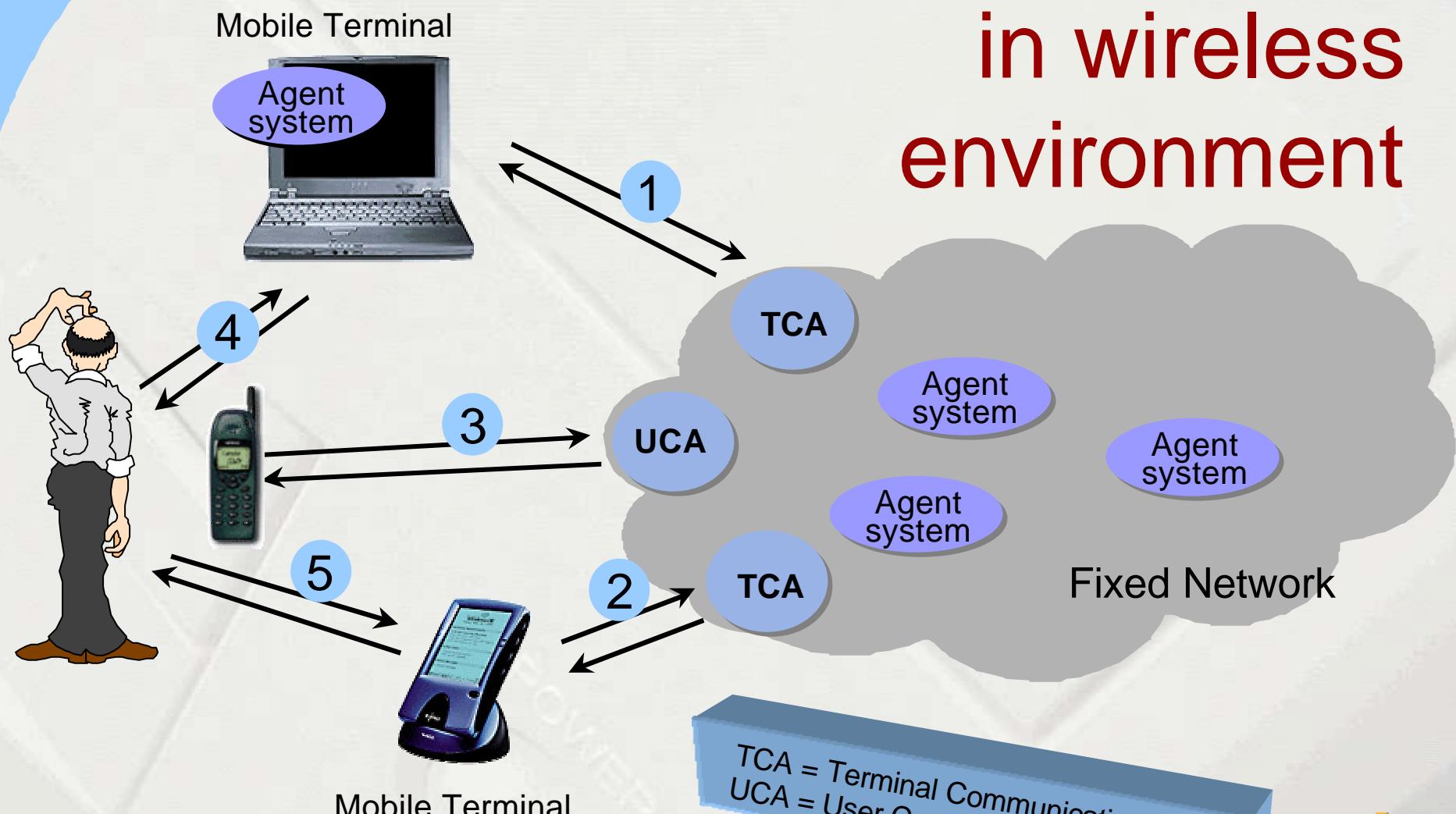
what is an agent?

- There is no unique agent definition
 - **Commonly used attributes**
 - autonomy, goal directed behaviour, social ability, reactivity, pro-activeness, mobility, etc.
 - Only common attribute is *autonomy*

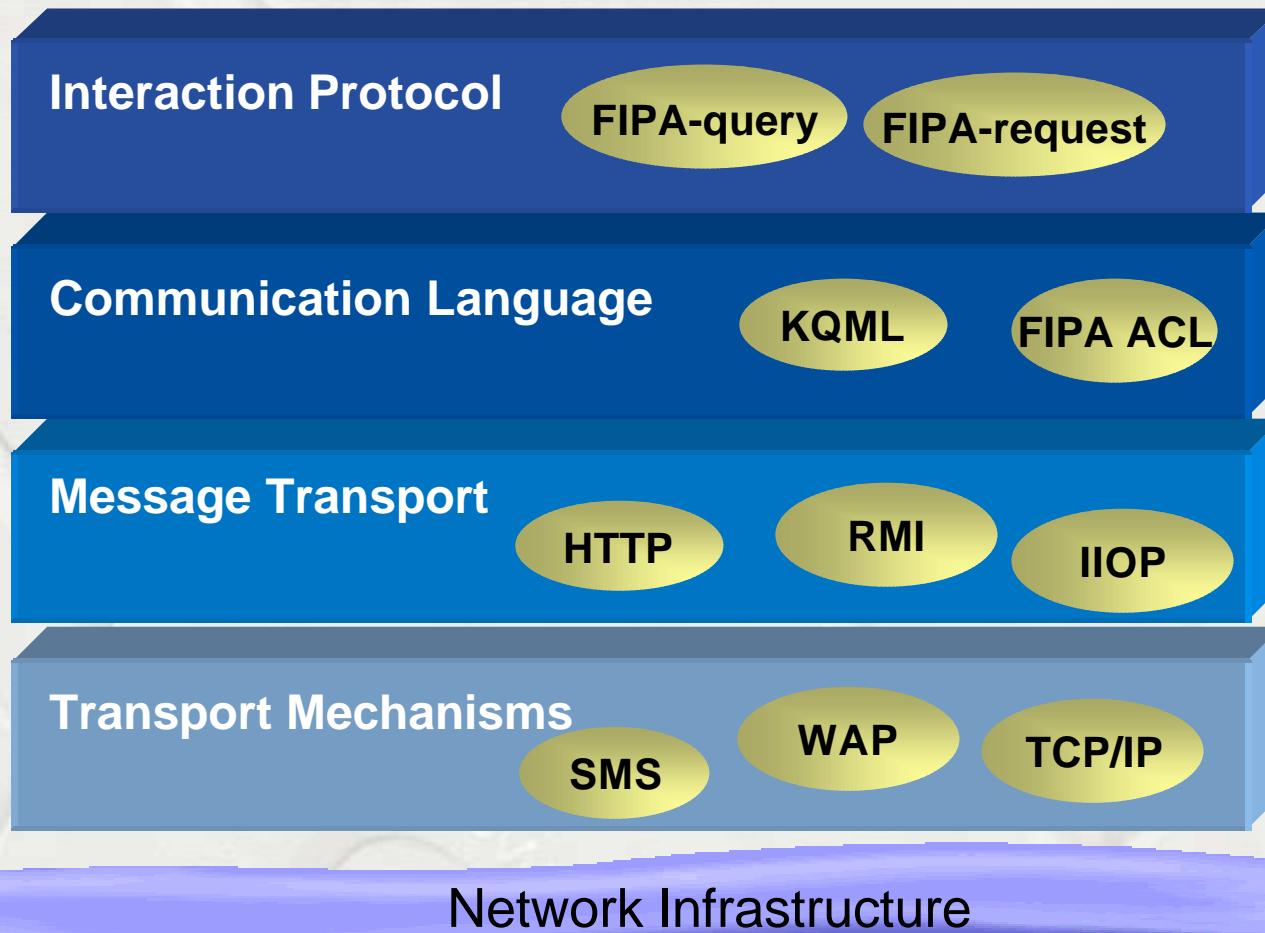
“An agent is a computer system capable of autonomous action in some environment”



agent communication in wireless environment



communication layers

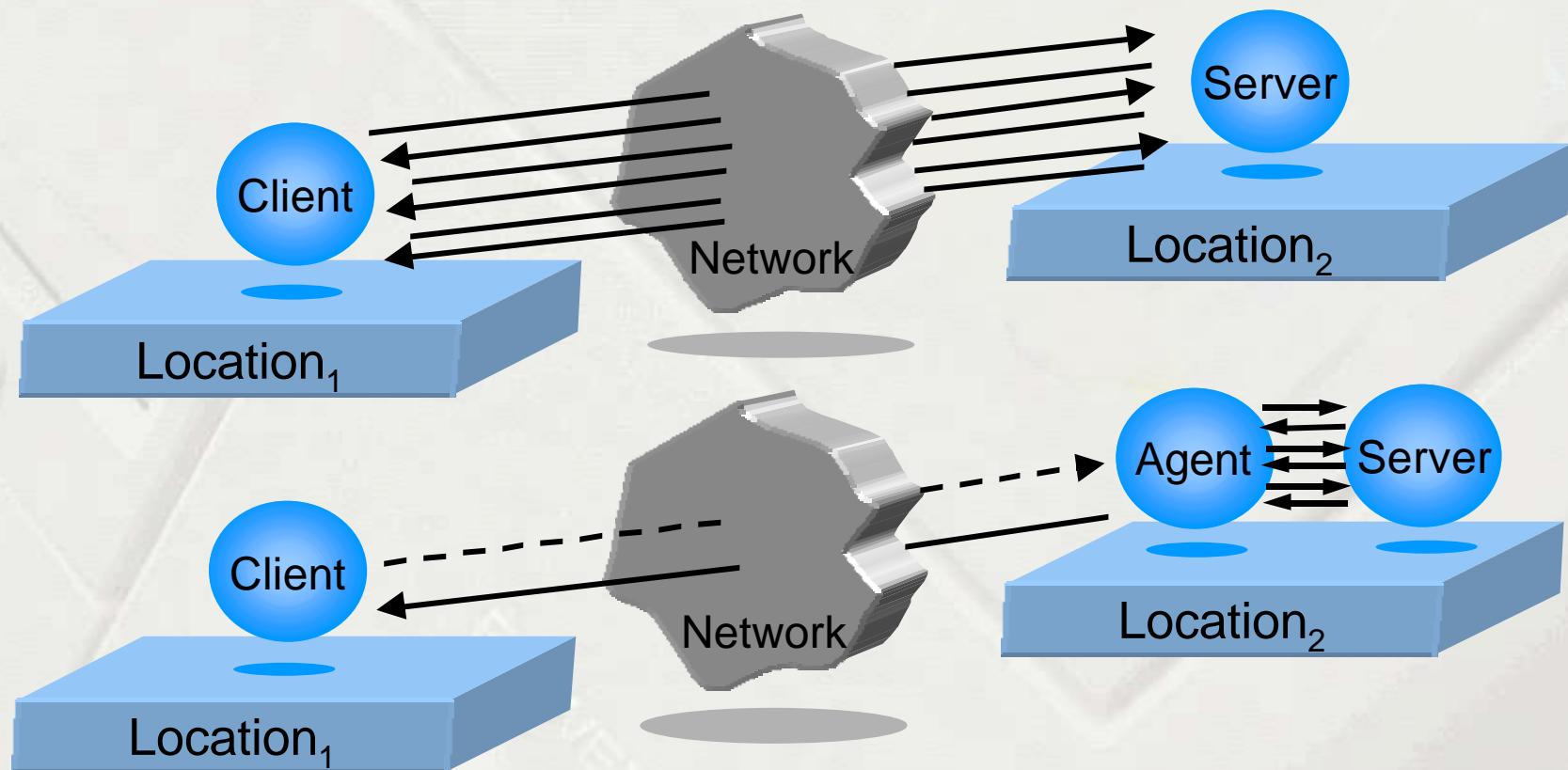


optimization of communication layers

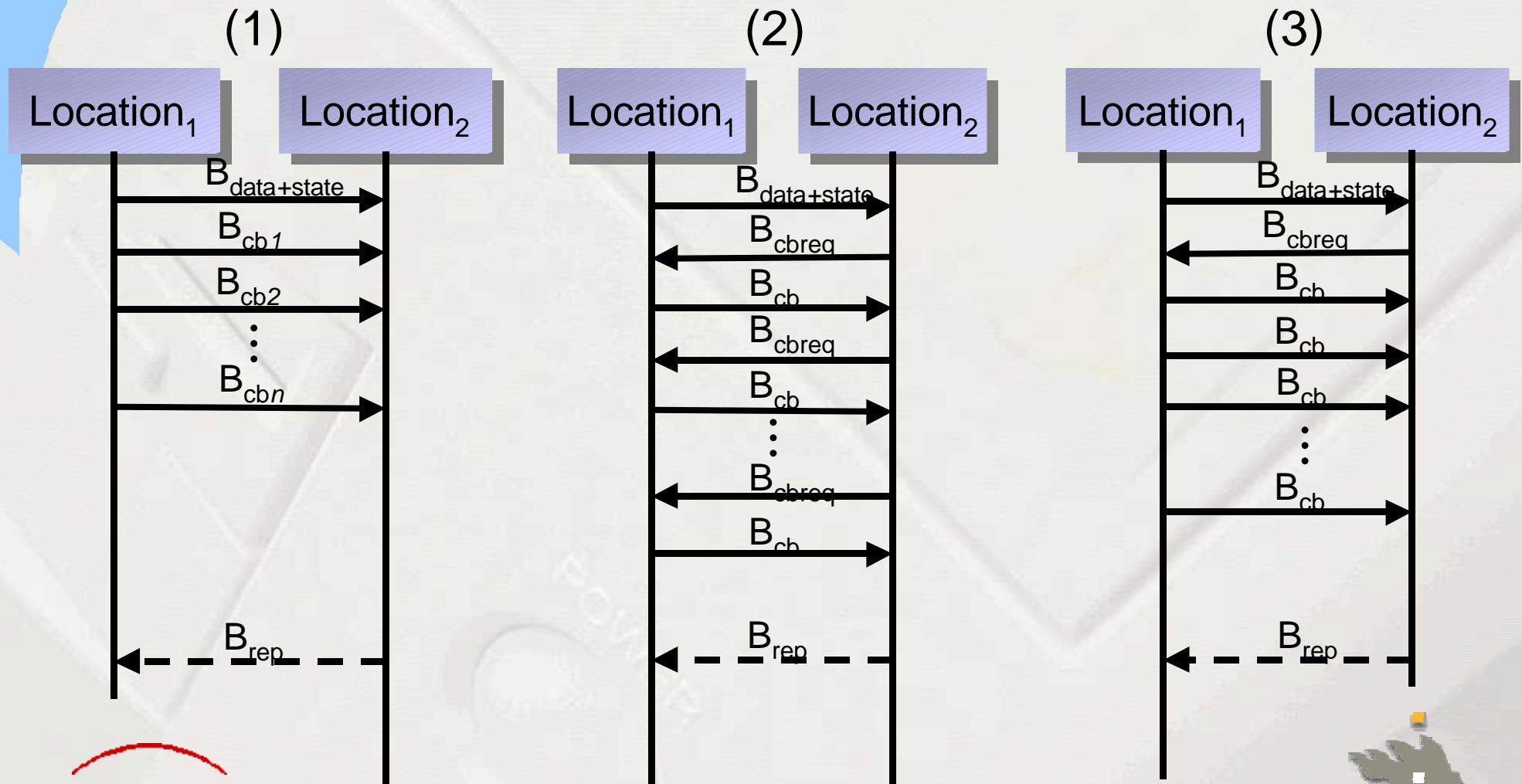
- Interaction protocol layer
 - remove (unnecessary) round-trips
- Communication language layer
 - efficient representation (ASCII vs. tokenized)
- Message transport layer
 - efficient protocol, location transparency
- Transport mechanism layer
 - efficient/suitable protocol, failure transparency



agent migration



agent migration scenarios



conclusions

- Agent communication in wireless environment needs special support from underlying architecture
- Optimization is needed in all communication layers
- Whether to migrate or not?
- Monads project
 - www.cs.helsinki.fi/research/monads/

