Implementation of a Delay-Tolerant Network Routing Protocol for Social Networks on Mobile devices

Abstract
This thesis will be part of the PodNet research project. PodNet allows exchanging podcasts (i.e., or any kind of multimedia content) from handys to handys in a peer-to-peer fashion over opportunistic contacts (Wifi). Currently, content dissemination is done implicitly using broadcasts, which address all potential subscribers of a channel. One new foreseen feature is the possibility to address the content to a precise recipient, which requires a unicast delay-tolerant routing protocol.

Delay-tolerant networking (DTN) is a novel communication paradigm for mobile networks lacking continuous network connectivity. In a DTN, asynchronous variable-length messages (called bundles) are routed in a store and forward manner between participating nodes.

Currently, there are few routing solutions available for this type of networks and almost no implementation. The goal of this thesis is hence to implement a DTN routing protocol based on related work ((SA), or the student’s own routing protocol (MA)).

The developed solution will have to be evaluated in a real-world scenario using the CSG testbed composed of 20+ mobile devices (iPhones, N95, Android G1).

Keywords: routing, delay-tolerant networks, dynamic social networks, community identification, design, implementation, evaluation.

Required Skills
This thesis will highly emphasize on programming on mobile devices.

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