1. P4P for mobile phones

Project description:
Integration of a mobile P2P application with P4P framework.

Problems we want to look into:
   a) What information is most useful and beneficial for the performance of mobile phone P2P applications;
   b) How mobile phone applications use P4P information efficiently;
   c) Better understanding the difference between PC applications and mobile phone applications.

Current Plan:
We may develop based on an existing open source mobile P2P application (e.g., MobTorrent), or we will port a popular open source application to Windows Mobile 6.
We will use P4P application-side Java API to retrieve P4P information from P4P portals deployed by service providers and also potentially our own portal that is customized for AKW building.
The development may take the largest effort, but we will also spend time on designing, running, and analyzing field experiments.
The final report will consist of a documentation and a potential in-class demo.

2. Alliance of Mobile Phones

Project description:
Let multiple mobile phones/mobile stations collaborate to
achieve more capabilities. The example we plan to use is: two mobile stations, each downloads part of a video stream, and share with each other by Bluetooth so both can play the stream.

Problems we want to look into:
   a) The architecture design of mobile phone alliance;
   b) How mobile phones ally to achieve a given objective;
   c) Analysis of the upper bound of the capability an alliance can achieve ideally;
   d) If possible, a simple algorithm to approach the ideal capability of alliance.

Current Plan:
   We may start from the detailed design and refine the architecture as the development work evolves.
   We may develop our own mobile phone Java application (both the video server and client). We may also modify an existing open source Java application to demonstrate our idea.
   The final report will consist of a documentation, a potential open source code package, and a potential in-class demo.