Project Overview

In the Mobile Security course project, student groups will identify and investigate problems of current interest in mobile and wireless security research. Each group of students will choose a topic within the scope of the class materials, develop and propose a research hypothesis, and work toward solving the problem of interest. Broad areas of interest include (but are not limited to) the following.

- Vulnerabilities in mobile cellular infrastructure or communication security protocols.
- Secure smartphone applications and services (including M-commerce, social networking, etc.).
- Mobile location and navigation security and privacy.
- Vulnerabilities in 4G (WiMAX, LTE) network communications and services.
- Development of novel secure platforms/services using mobile technologies (e.g., secure device-to-device communication in hybrid mobile systems).
- Communication and networking vulnerabilities in mobile ad-hoc, sensor, and mesh networks.

Depending on the chosen topic, teams will develop novel techniques toward the desired goal, implement their technology either in a simulation/emulation environment or in an appropriate system (e.g., mobile phones, sensor nodes, SDR kits), and evaluate the performance and security impacts of their approaches using appropriate metrics.

Project Requirements

Teams of 2-3 students will be formed during the first week of class. Under the guidance of the instructor, each team will choose a project topic by the third week of the semester, submit a one-page project proposal, and present their project proposal to the class (10-15 minutes/team). Teams will present progress updates to the class twice during the semester, and a final project presentation will be made during the last week of class. In addition, each team will submit a written project report, including documentation of any hardware or software systems developed as part of the project, at the end of the semester. In certain cases, the final project report can be replaced by a conference or workshop paper, poster, or demo submission. The scope and depth of the project must be appropriate for a semester-long course project, and project components can be added, removed, or modified throughout the semester.

Deliverable Time-Line

The following schedule of project deliverables has been tentatively set and is subject to changes.

- **Proposal**: Thursday, September 9, 2010
- **Project Update 1**: Thursday, October 14, 2010
- **Project Update 2**: Tuesday, November 9, 2010
- **Final Presentation**: Tuesday, November 30 and Thursday, December 2, 2010
- **Written Project Report**: Tuesday, December 7, 2010