

Project Description:
Mesh Network Feasibility Study
PI: Aram Sinnreich

Summary:

The purpose of this project is to study the technological, social and regulatory feasibility of developing a peer-to-peer mesh networking protocol. This would serve as the foundation of a decentralized, ad hoc wireless mesh network, which would illuminate potential technology-based solutions to censorship and surveillance on existing digital communications platforms.

Background:

Although the Internet is highly decentralized in its communication and social patterns, its technical and regulatory foundations are extremely hierarchical, due to centralized control by organizations like ICANN and the oligopolistic ownership of the access business by a handful of broadband ISPs and wireless carriers (Wu, 2010). As a result of this centralization, digital communications are compromised by a degree of surveillance and censorship that would be unthinkable in traditional social arenas, threatening our cyberliberties and “e-speech” rights (Sinnreich & Zager, 2008). Seemingly disparate issues like network neutrality, intellectual property treaties and national security measures, taken in combination, threaten to produce a communications environment in which innovation is stifled and normative cultural behaviors are criminalized and punished by censorship, fines and/or imprisonment.

One potential solution to this problem would be to create a new communications platform based on existing Internet protocols, but with a decentralized infrastructure free of the bottlenecks and chokepoints that plague the current system. Specifically, this new infrastructure would use mesh networking technologies to produce a stable, ad hoc global wireless network in which each peer is a router, server and client combined, and in which no single state or organization can effectively censor or surveil the population on a massive scale.

Timeline:

The feasibility study would be conducted during Spring term 2011, and, pending a positive outcome, additional funding would be sought during Summer, 2011.