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Project Overview

- Smart devices will require easy-to-deploy networks.
  - No base stations, cables, management.
- Ad-hoc networks promise minimal deployment effort.
  - Nodes forward each others packets: multi-hop.
  - Previous ad-hoc techniques don't scale well.
- CarNet investigates *scalable* ad-hoc networking.
- CarNet techniques:
  - Geographic forwarding (Grid).
  - Scalable distributed location service (GLS).
  - Automatic self-configuration.

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Progress Through June 2001

- Two papers published at MobiCom 2001 conference.
  - Analysis of ad-hoc network capacity.
    - Identified realistic bandwidth expectations.
  - Power-saving radio protocol design.
    - Elects multi-hop forwarders in each area.
    - Non-forwarders can sleep.
- Built experimental-quality prototype.
  - Floor-wide net of Compaq iPaqs and fixed relays.

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Research Plan for the Next Six Months

- Complete production network deployment.
  - Relays throughout MIT AI/LCS building.
  - Gateways to wired Internet.
  - Public software distribution for iPaqs.
- Investigate position estimation using signal strength.
- Investigate hardened routing.
  - Prevent injection of malicious routing information.