The Bay Area Research Wireless Access Network (BARWAN)

New Ideas

• **Wireless Overlay Internetworking**
  – “Overlay” IP extensions to Mobile IP
  – Low Latency Inter-subnet Handoffs
  – High Thruput Reliable Transport
  – Class-Based Queuing Link Management
  – Subnet Bandwidth Load Balancing

• **Client-Proxy-Server Architecture**
  – Bandwidth-aware Data Type Adaptation
  – Web & A/V Data Types over Wireless
  – Proxy-Aware API, Kerberos Integration
  – Delivery Class Abstraction
  – Scalable Wireline Processing for Mobiles

**Impact**

• Fundamental technology for 21st century battlefield communications: support for wide diversity of hybrid & asymmetric link technologies, and end device display & computation capabilities

• Seamless roaming & application adaptation across 3–4 orders of magnitude of wireless b/w and latency (10 kbps to 10 mbps, 1 ms to 1 s)

• Demonstrate network & application techniques able to scale to support 10s of data users/room, 100s/building, 1000s/facility, 10000s/metro, and 100000s/region

**Schedule**

- **Aug 95** Start
  - Measure & Eval Wireless Ovly Technologies
  - Early Prototype Proxies (1-10 users)
  - Initial Architectural Specification

- **Aug 96**
  - Proto Scaled Proxies (100-1000 Users)
  - Scaled Architectural Specification
  - Demo in-building ovrlvs & h/os with dynamic b/w alloc

- **Aug 97**
  - Scaled Proxies (1000-10000 Users)
  - Demo wide-area ovrlvs & low latency h/os w/ subnet load balancing

- **Aug 98** End
  - Large Scale Scalability Demonstrations