



*Locate, Sense & Track Assets  
within your Enterprise  
or Across the World*

[www.g2microsystems.com](http://www.g2microsystems.com)



## *G2 Microsystems Enables Active Asset Tags that Locate and Communicate through Wi-Fi*



*Wi-Fi Access Point*

- *Wi-Fi Access Points are Pervasive*
- *Lowest Total Cost of Ownership*
- *Standards-based RTLS*

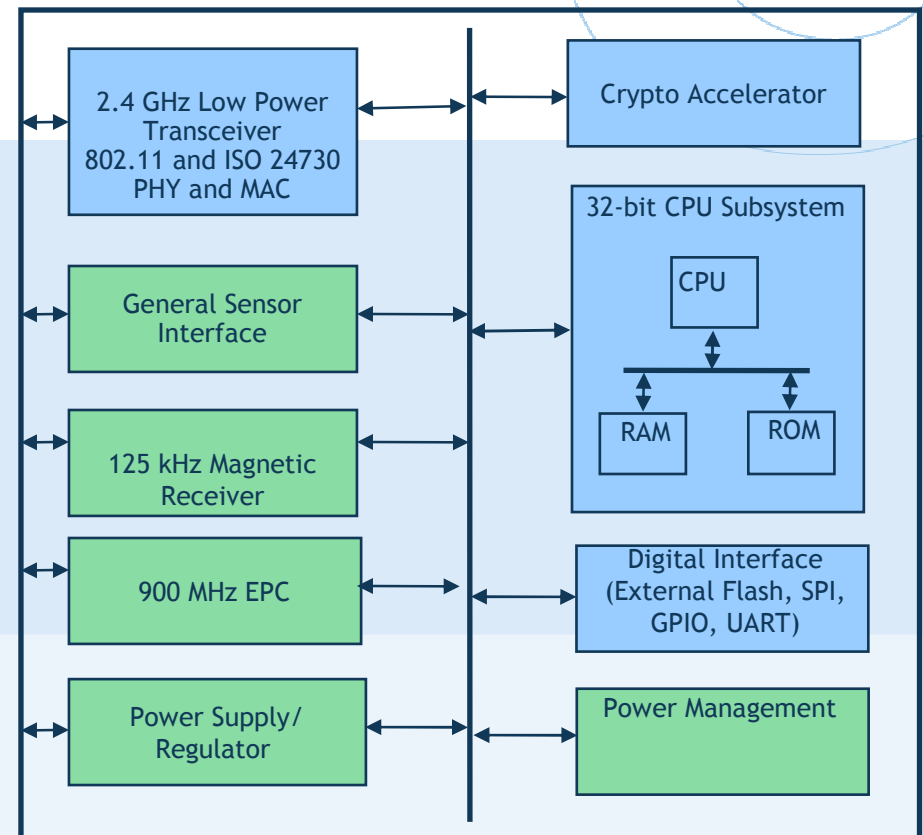
## *G2 Microsystems Enables Active Asset Tags that Sense Environmental Conditions*





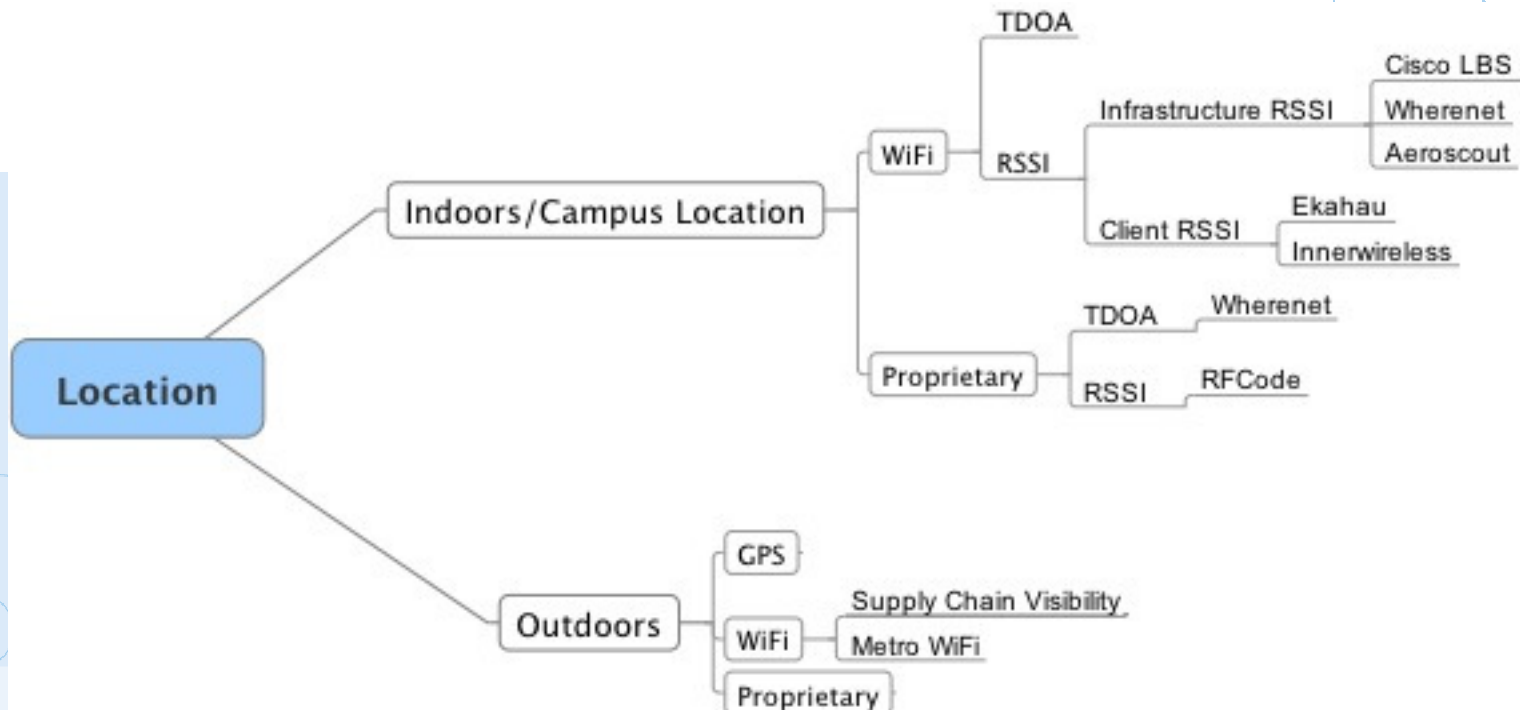
# G2's Ultra Low-Power Wi-Fi

- Optimized for battery-powered devices
  - Power management results in  $<3\mu\text{A}$  in standby
  - Optimized boot process:  $<10$  msec boot time from standby to active mode
  - On-chip regulators account for  $\sim 100\text{mW}$  system power consumption with competitive solutions.
  - Receive power is best in class.
- High level of Integration
  - Integrated 32-bit CPU with multi-threaded eCos OS and TCP/IP stack built into ROM allows SoC to serve as host processor
  - Directly supports multiple battery types
  - Application specific functionality – drives lower system cost and form factor.



**G2C50X**

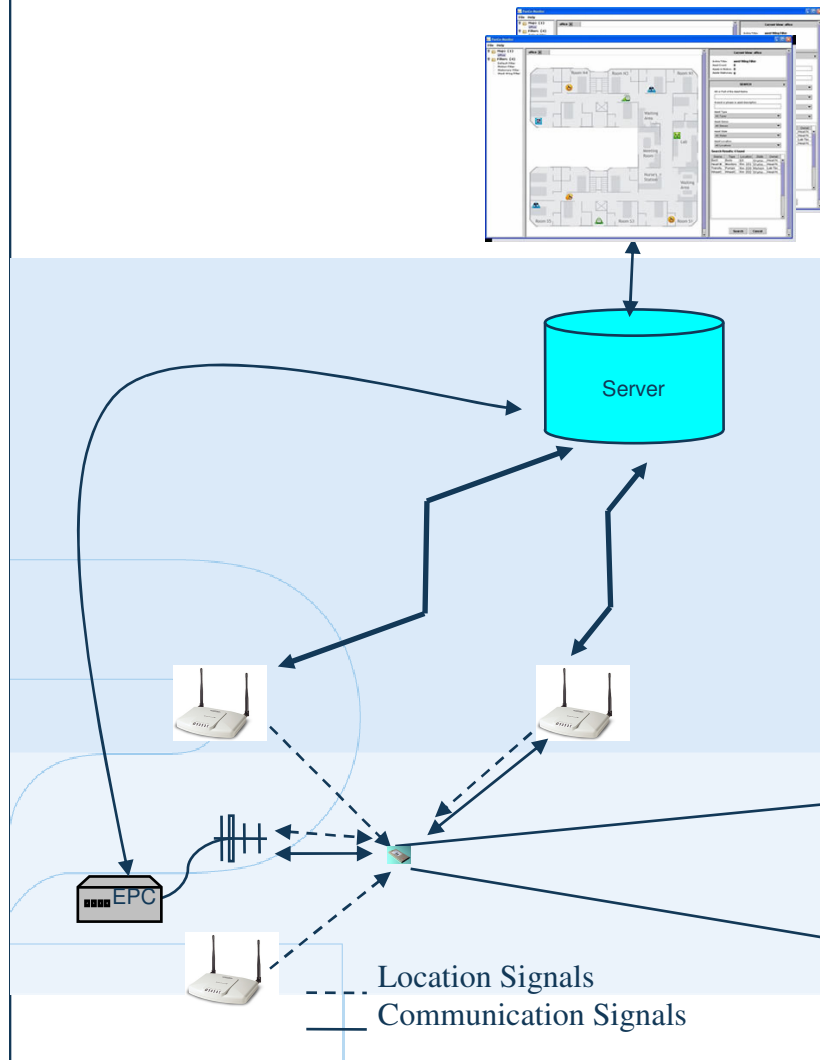
# Location Taxonomy



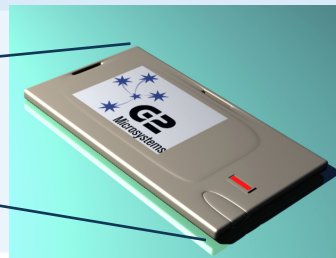


# Markets

## Indoor and Campus Location

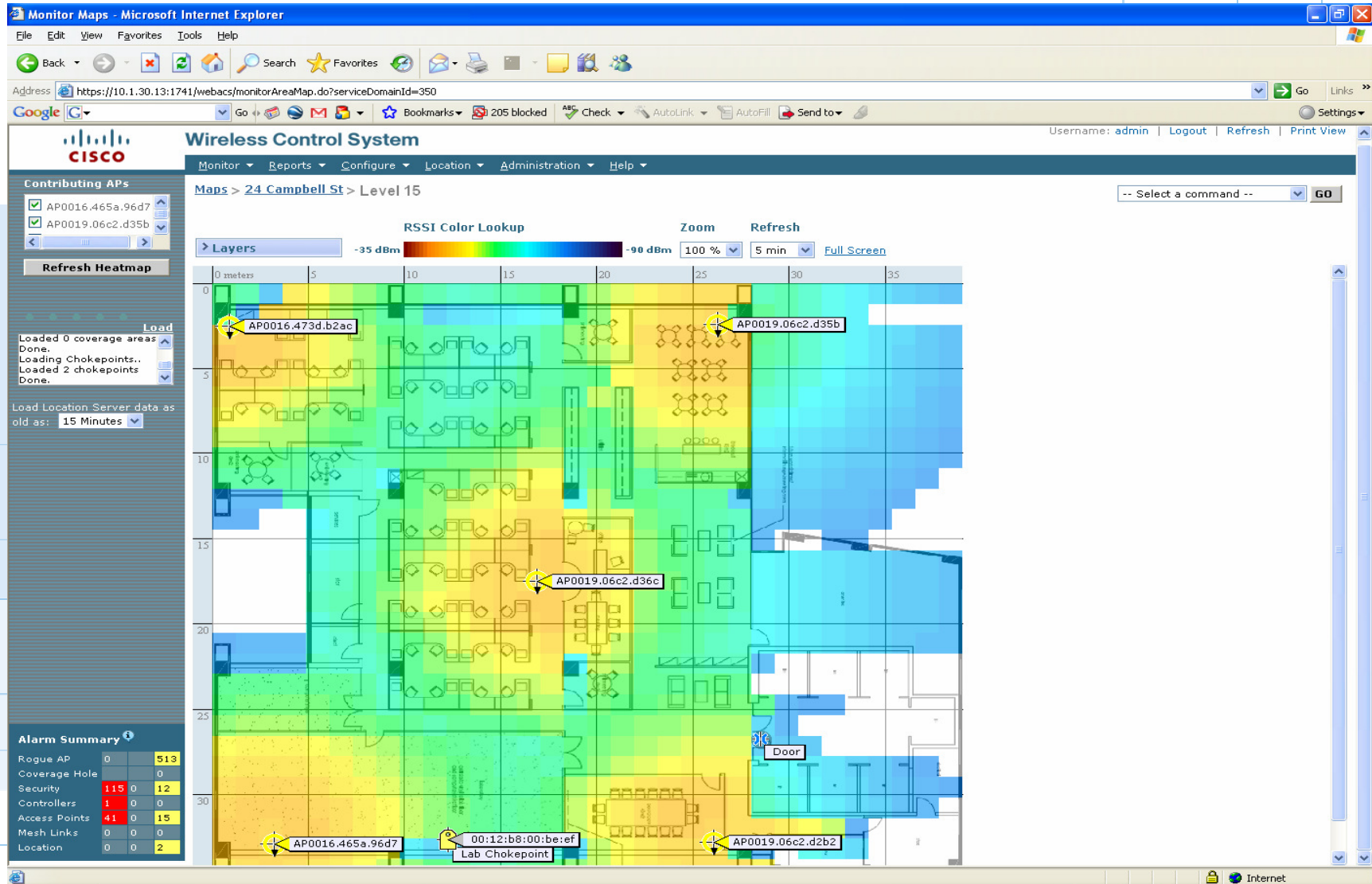


- ✓ Multiple Location Technologies
  - Location by Proximity
  - RSSI
  - TDOA
  - 900 MHz EPC Signpost
  - 125Khz Magnetic Signpost
- ✓ Sensor Interface for temp, pressure, humidity, security, motion, shock, light, chemical, ...
- ✓ 802.11 system on chip
- ✓ 802.11i security
- ✓ Field programmable
- ✓ Works with multiple software solutions





# Example RTLS System



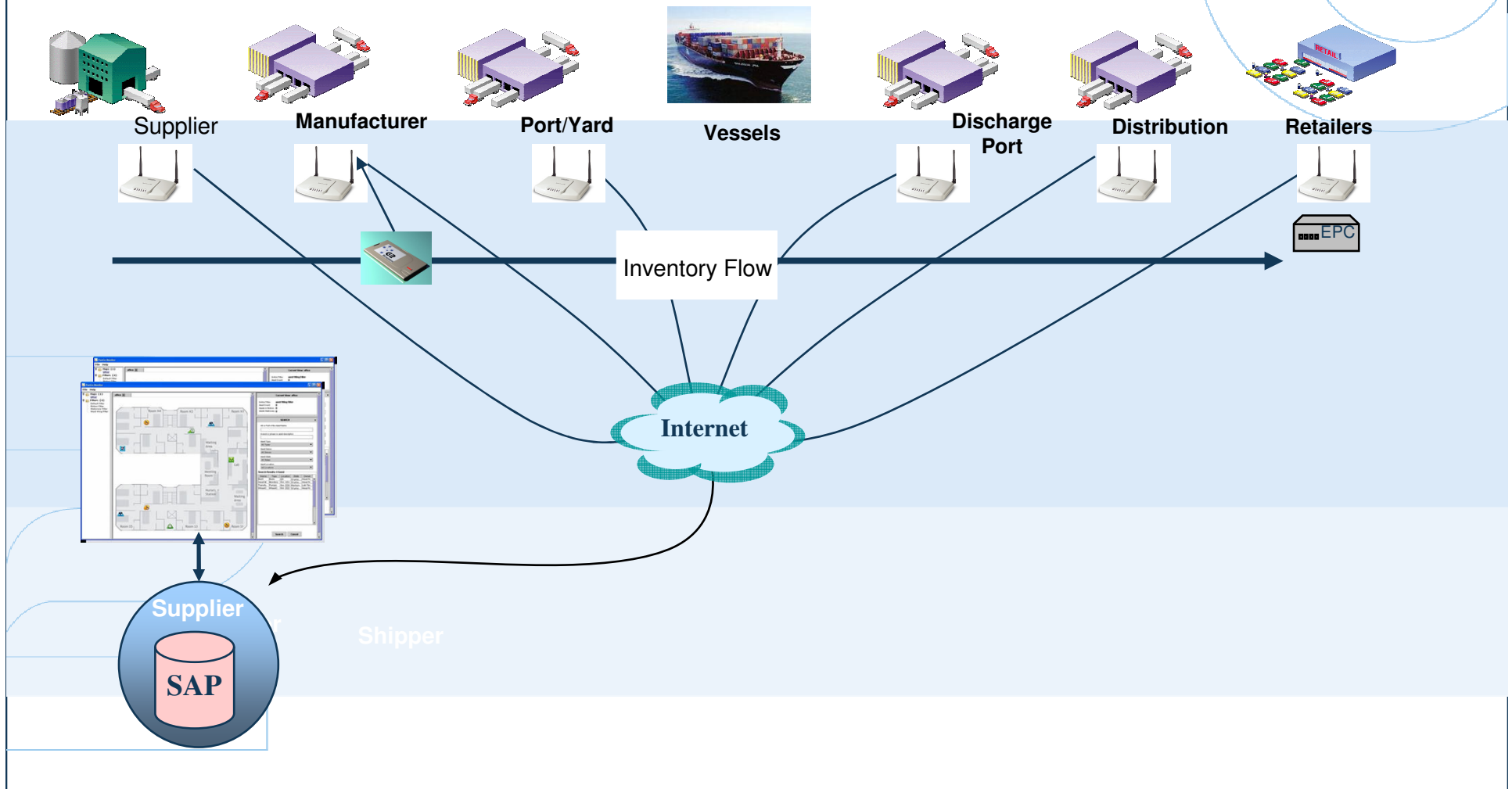




# Markets

## Supply Chain Visibility

*Supply chain visibility requires seamless flow of information to partners across the supply chain.*







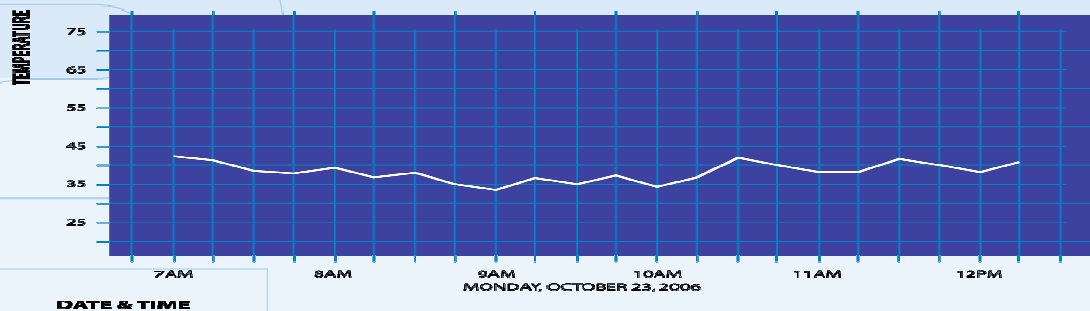
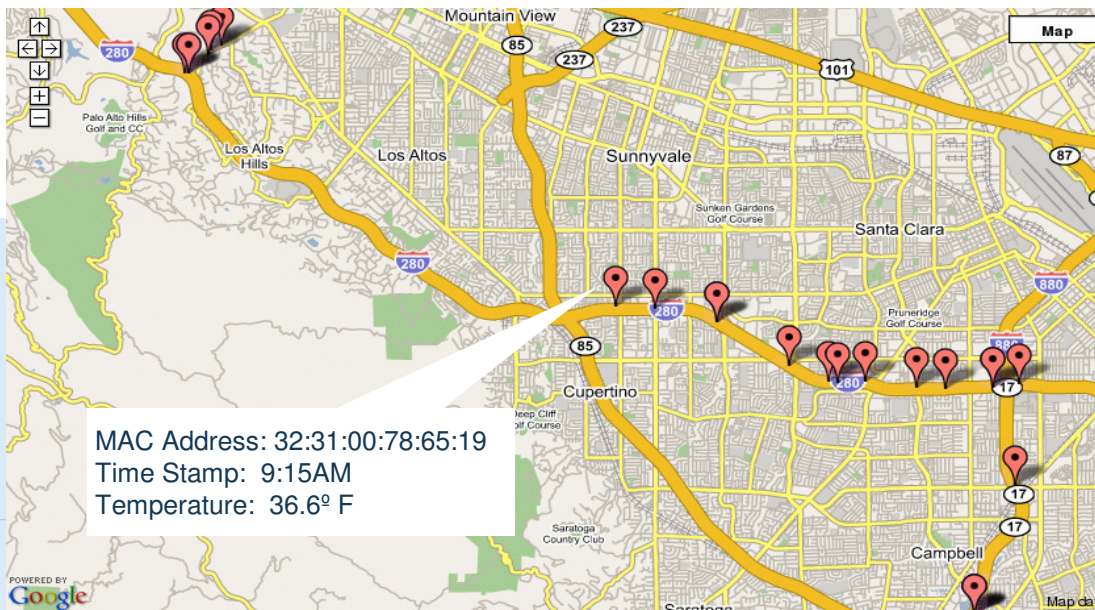
# Telemetry over EAP

- Solves a significant supply chain problem
  - Allows location and sensor data to be sent to tag owner (and other interested parties)
  - Does not need middle-ware integration at remote sites
  - Low security impact at remote sites
- An extension of EAP-TLS (industry standard) or EAP-FAST (Cisco supported)
  - All the security of certificates and PKI infrastructure
  - Revocation of security credentials on a per tag basis
  - No pre-shared key distribution hassles
- Supports session resumption for very long lived session-ids
  - Dramatically reduces power consumption in the tag while retaining certificate based security
- Telemetry data is sent inside TLS tunnel
  - High security - the tag never needs to be granted normal network access to transfer telemetry data
- Simple one-off configuration at target sites
  - No on-going key management issues within the supply chain at remote or partner sites
  - All key management contained to tag-owner's site

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# Access Point to GPS Coordinate Databases Metro WiFi



WiFi based location systems can:

- Achieve GPS level accuracy in metropolitan areas.
- Monitor conditions continuously between OD pairs.
- Report conditions remotely without back-office integration or costly GPRS charges.
- Work seamlessly across the world.



# G2 Microsystems

*G2 Microsystems designs ultra low-power asset tracking integrated circuits and tags that leverages the global 802.11 infrastructure to locate, sense and track assets.*

- ✓ High level of functionality to meet user requirements
- ✓ Transparent tracking across the supply chain
- Multiple location technologies
- Environmental sensing
- Versatile – field programmable, secure communication
- ✓ Multi-year battery life
- ✓ Low Total Cost of Ownership (TCO)