

Case Studies

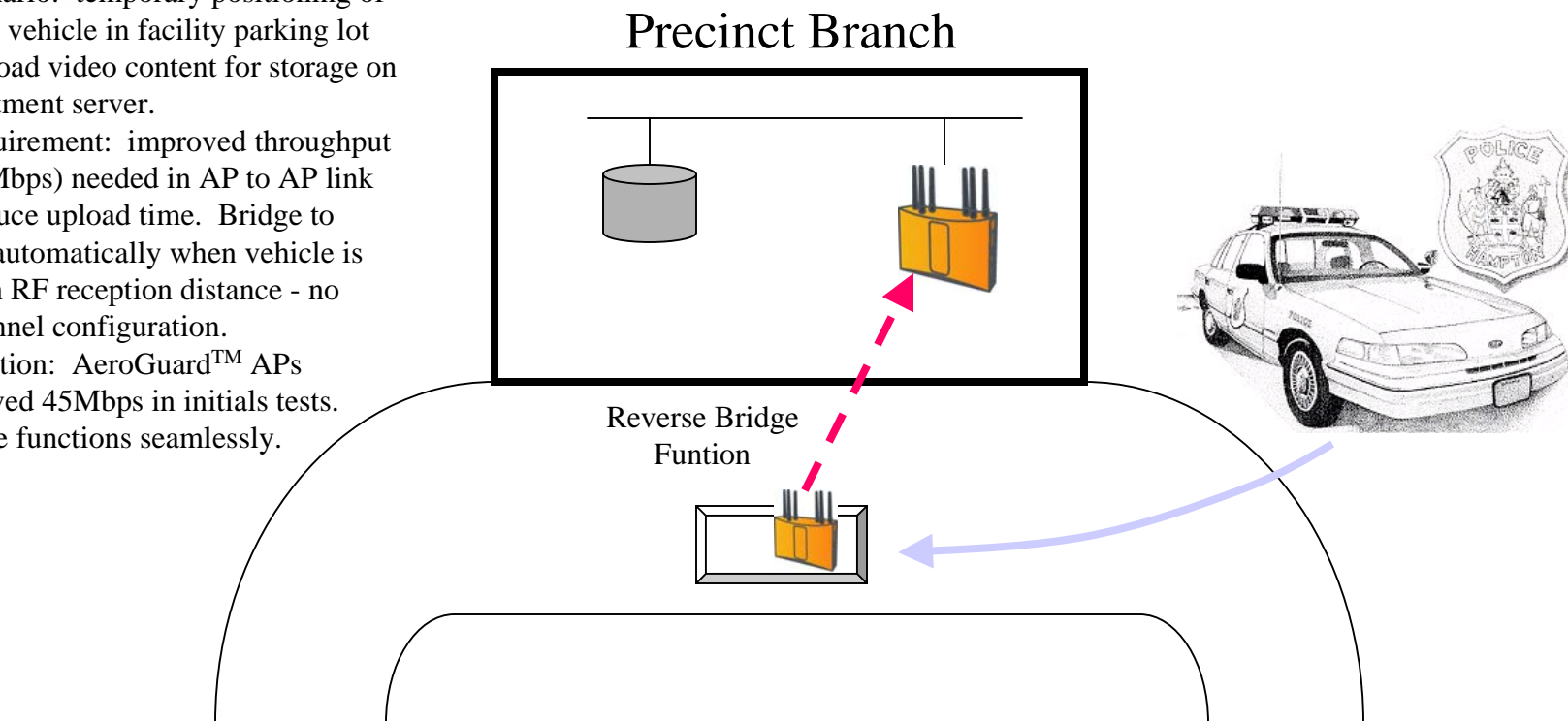
AeroGuard™ MIMO Solutions



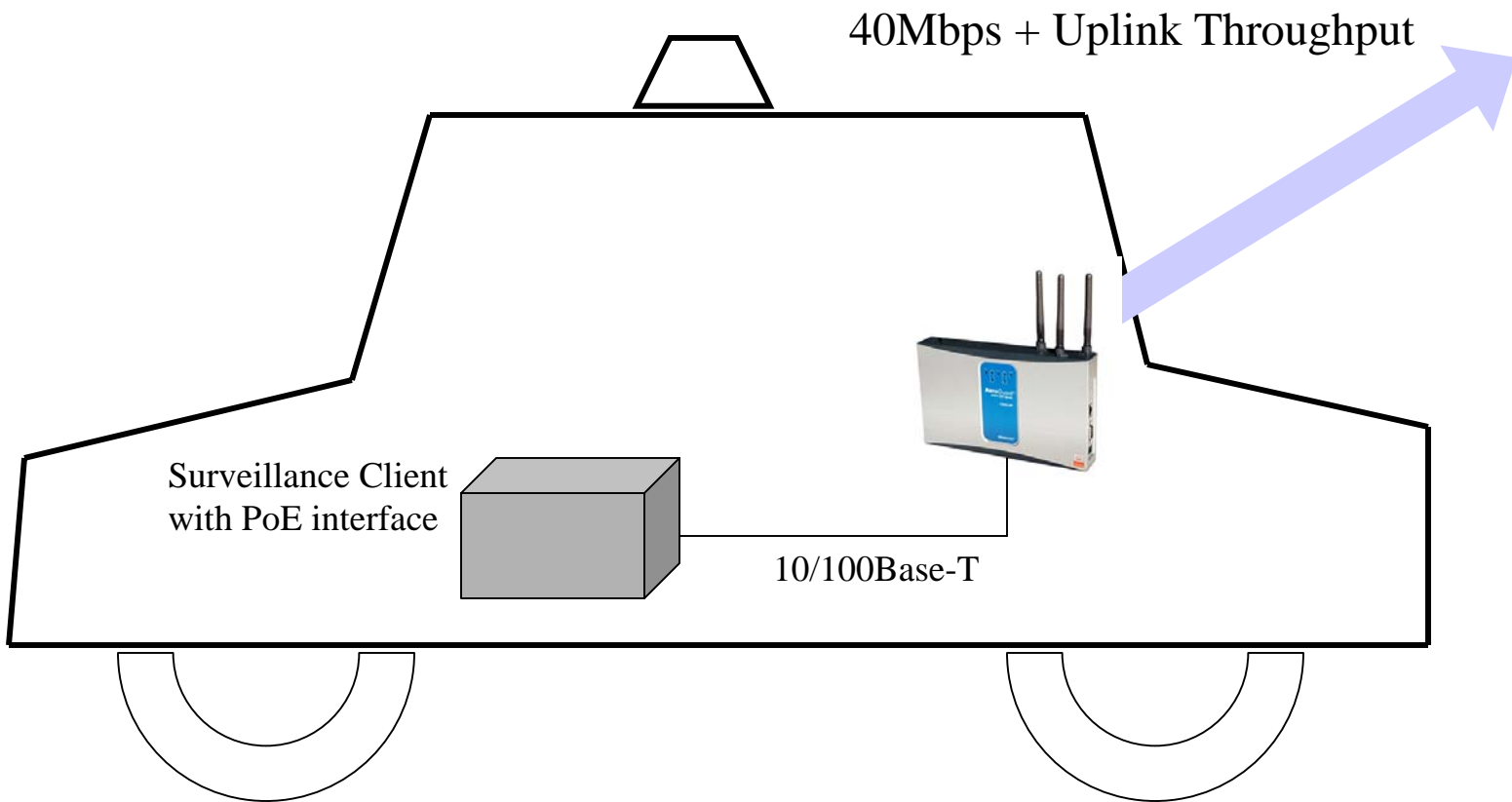
Surveillance Video Bridging

Law Enforcement Applications

- Scenario: temporary positioning of police vehicle in facility parking lot to upload video content for storage on department server.
- Requirement: improved throughput (>20Mbps) needed in AP to AP link to reduce upload time. Bridge to form automatically when vehicle is within RF reception distance - no personnel configuration.
- Solution: AeroGuard™ APs achieved 45Mbps in initials tests. Bridge functions seamlessly.

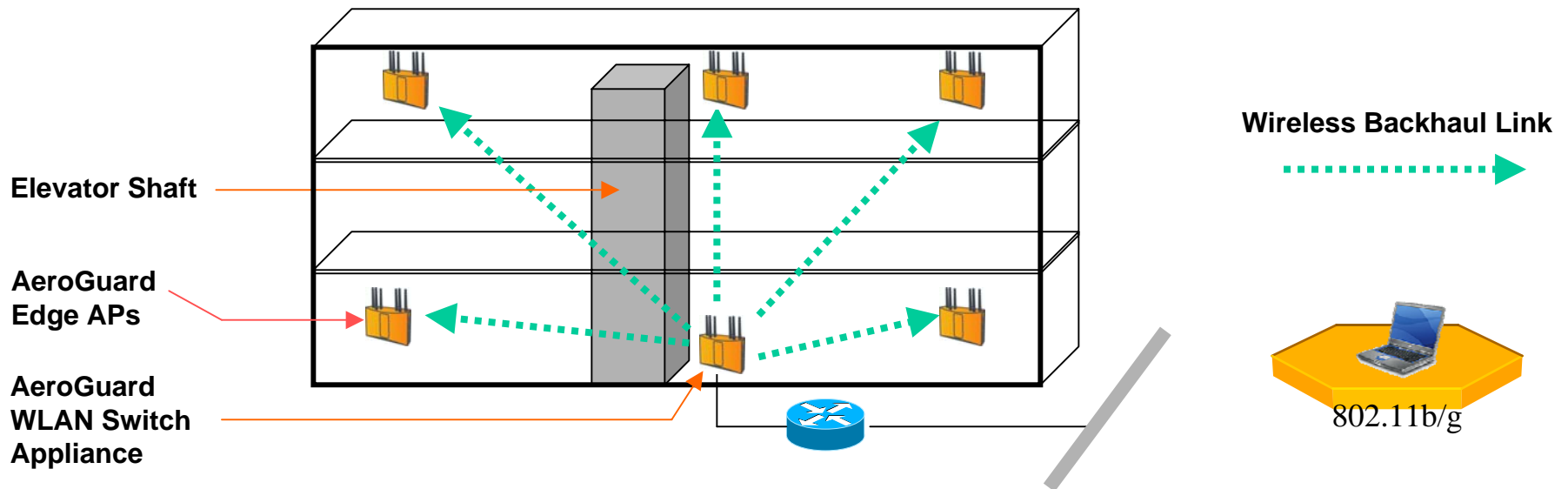


Surveillance Video Bridging - 2



Comfort Suites, Charleston, SC

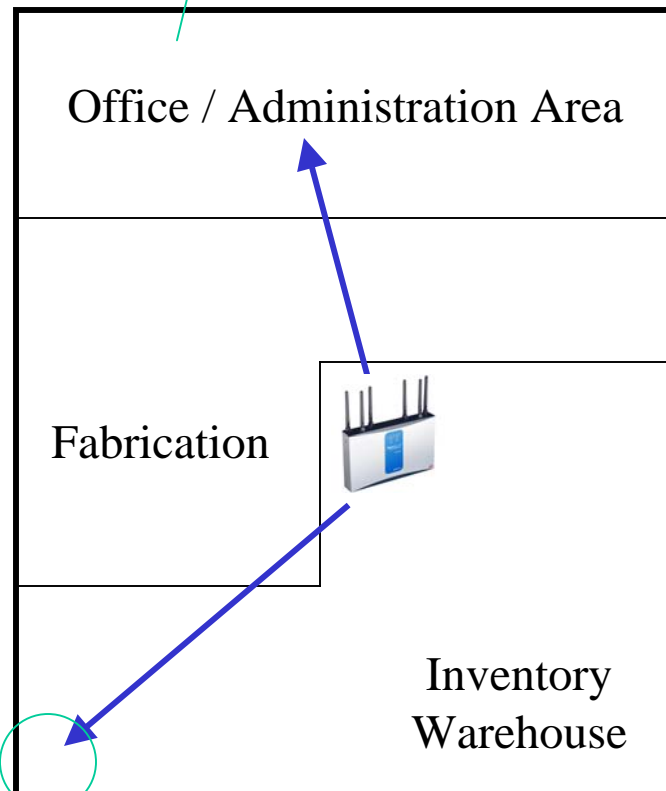
- Scenario: New hotel has 3 floors and no Ethernet infrastructure, but needs to offer amenity guest access. Management has concerns about construction interruptions in the facility if Ethernet must be installed.
- Requirement: Full hotel wireless coverage for guest access. Rapid installation needed to meet peak Fall business events schedule.
- Solution: AeroGuard™ APs were deployed without having to install Ethernet cables. Utilized the wireless mesh backhaul feature to complete an all wireless network with full site 11b/g Wi-Fi coverage on all floors. MIMO RF performance allowed wireless backhaul even when blocked by central elevator shaft.



CMP Warehouse Application

Sypherdata

Complete office area coverage with a minimum of 54Mbps using conventional 11g adapter



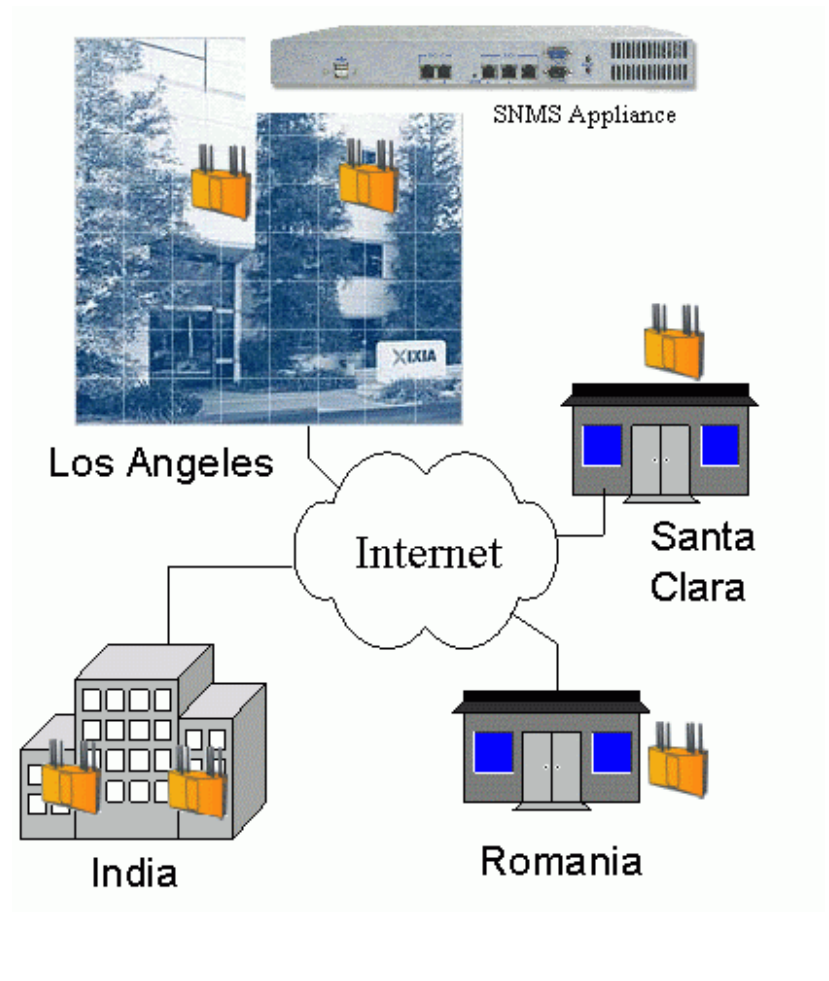
108Mbps available at up to 175 ft away from AP



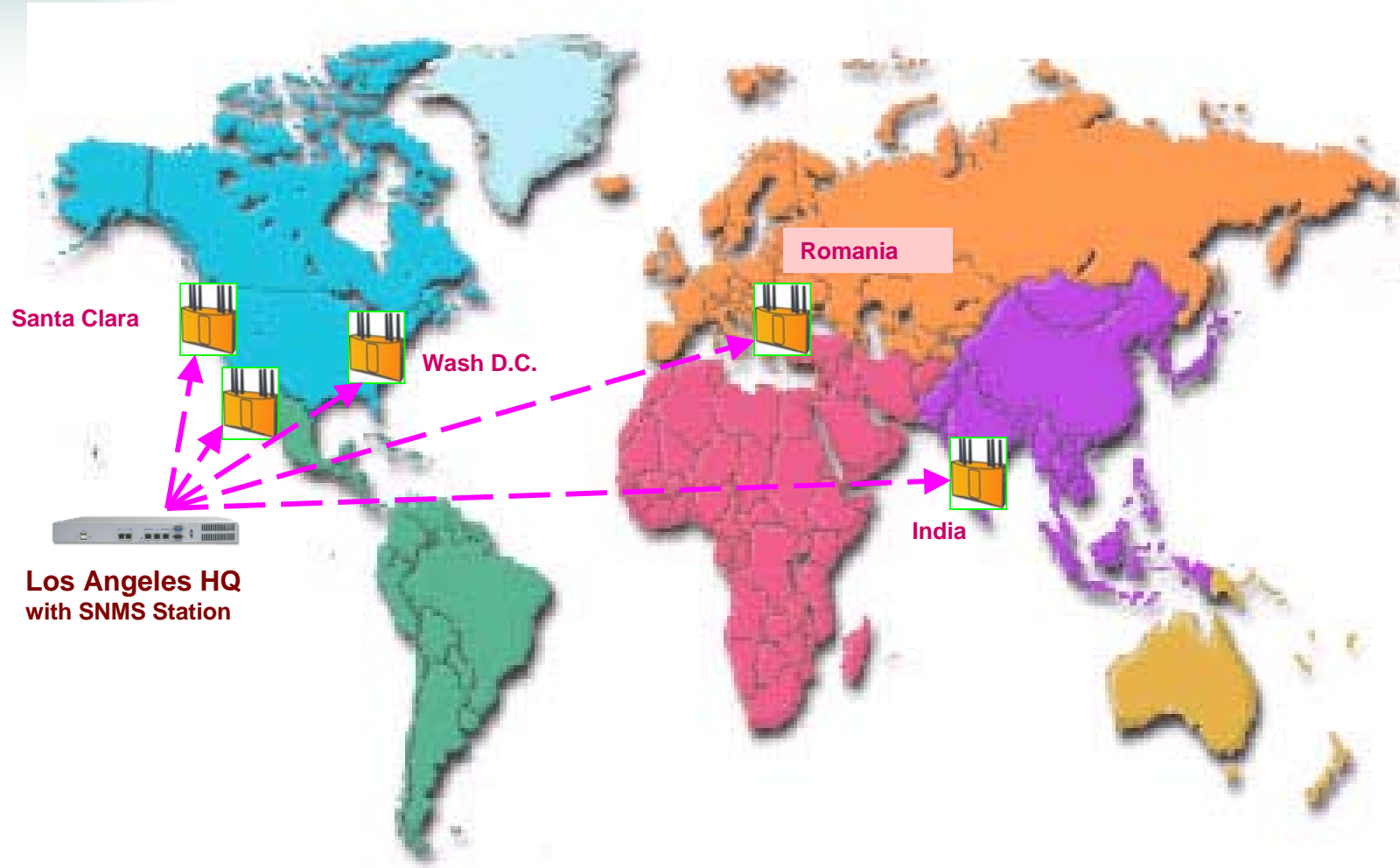
- Scenario: Industrial products manufacturer with 40,000+ sq ft of floor space, including fabrication, office and warehousing space. Implementing an inventory control software application with bar code data entry system to improve efficiency.
- Requirement: Need a robust and reliable wireless network with the highest data throughput possible to link the multiple wireless data entry terminals (bar code scanners) with the corporate infrastructure for real-time inventory analysis.
- Solution: One AeroGuard™ MIMO AP was deployed in the center of the plant, which provided complete facility coverage at data rates that exceeded 100Mbps. This provided wirespeed data networking throughout the warehouse and office spaces.

Distributed Enterprise

- Scenario: Ixia is a leading, global provider of high performance IP network testing solutions, and markets its products worldwide through a network of direct sales offices and distributors. Their need was to maximize efficient network connectivity for its mobile sales staff at each location using a standardized corporate platform that would be manageable from a central location.
- Requirement: A wireless LAN solution that provides Enterprise class security and manageability, with the installation flexibility to easily adapt to varied building requirements. Each distributed office location would need to link to a centralized management station located in their Southern California headquarters for real-time remote monitoring, diagnostics and maintenance functions.
- Solution: AeroGuard™ MIMO solution provided both wireless LAN AP networks at multiple global locations and SOHware NMS (SNMS), a fully scalable management system. SNMS is ideal in managing the nine APs currently deployed with scalability to support future AP additions.



Distributed Enterprise - 2





Performance Validation

Lockeed Martin

- Scenario: Lockheed Martin, a leading government agency contractor, evaluated AeroGuard™ MIMO performance to determine suitability in various applications for agency customers and within their own organization.

Testing results:

Beau Ward, Senior Systems Engineer, Lockheed Martin

-- Interference Mitigation

Preliminary Conclusion: MIMO technology mitigates interference issues that often cause severe difficulties in traditional 802.11 systems.

For this test, I had an ad-hoc MIMO network on 802.11b/g channel 6. Additionally, a traditional 802.11 access point was also on channel 6. I set up a traffic generator to send UDP packets to the traditional 802.11 client while the MIMO clients were conducting a video teleconference. A video conference seemed the best application to detect network difficulties, since it requires both significant bandwidth and a fairly high level of service quality (i.e latency, jitter, etc..) I noticed that the traditional 802.11 network was suffering delays (i.e. ping timeouts) as a result of RF interference. However, the video conference on the MIMO network was not affected.

-- Client Performance

Preliminary Conclusion: A MIMO client card improves reception over traditional 802.11.

This test involved using Netstumbler to conduct measurements in an environment containing both traditional 802.11 and MIMO 802.11 access points. The MIMO client card could detect more active access points than the traditional 802.11 card. Both cards were used by the same system at the same location, to avoid discrepancies in power output or transmitter location.