Cisco Outdoor Wireless Solutions—Parking Meter Management

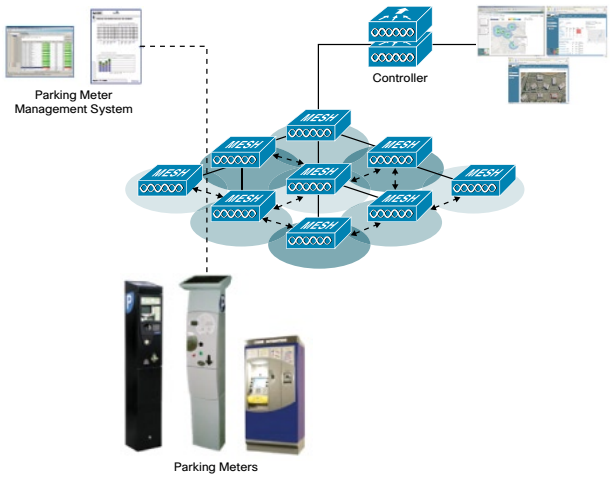
At-A-Glance

Why should I care about parking meter management?

As the population grows in urban and suburban areas, it becomes increasingly difficult for parking authorities to effectively and efficiently manage parking resources in downtown areas, shopping malls, college campuses, etc. Parking meter management systems operating over a wireless mesh network help to efficiently operate and monitor parking meters.

Modern parking meters have sensing and communications capabilities and can constantly give an update on the specific parking situation to a central office. At the central office, administrators can monitor the state of each parking meter and any parking violations. Based on this information, officers can be dispatched to issue tickets. Parking statistics can be used by city officials to optimize parking programs. As part of the centralized management, each meter can also be programmed with specific parking policies. Additional features such as multiple language displays, tourist information, and maps can be made available through the parking meters.

Figure 1. Cisco Wireless Mesh Network for Parking Meter Management



Cisco Wireless Mesh Network and Wireless Parking Meter Management

The Cisco® Wireless Mesh Network provides the wireless infrastructure that supports parking meter management (Figure 1). It is based on the Cisco Aironet® 1500 Series, an outdoor wireless mesh access point, which is mounted on power poles, streetlights, or buildings to cover a wide area.

Cisco Wireless Mesh Networks offer the following benefits:

- **Self-configuring:** The networks support zero-touch configuration deployment; access points discover each other automatically and select the best path for maximizing system capacity and minimizing latency by using intelligent wireless routing.
- **Self-healing:** Access points are resilient and self-healing for interference or outages, and dynamically re-optimize when new sectors are added.
- **End-to-end security:** Access points are specifically designed for secure outdoor Wi-Fi, compliant with Wi-Fi Protected Access 2 (WPA2), and employ hardware-based Advanced Encryption Standard (AES) encryption between wireless nodes.
- **Ease of deployment and centralized management:**
  - Cisco wireless LAN controllers and the Cisco Wireless Control System (WCS) enable centralized network management
  - The solution is based on Lightweight Access Point Protocol (LWAPP)
  - Cisco's new Adaptive Wireless Path Protocol (AWPP)

What are the benefits of wireless parking meter management?

Municipalities today are looking for ways to increase their revenue sources, simplify operations, and improve citizen satisfaction. A wireless parking meter management solution can help to make parking space management and enforcement more efficient:

- Increased parking revenue
  - Enhanced enforcement information reduce lost revenue
  - Receipt-based system with online credit card authorization simplifies transactions
  - Multiple payment options improve customer compliance
  - Enhanced cash security systems avoids lost revenue
  - Optimized management of parking system can lead to growth of commercial business in the community
- Reduced operating costs through real-time knowledge of events and statistical analysis
  - "Just-in-time" collection system enables staff to work more efficiently
  - Wireless communications keeps staff apprised of equipment status
- Improved service to citizens
  - Customers are able to add money to parking meters using their cell phones
  - Down time is decreased; when a meter goes down it can alert the central office
- Low cost of overall installation
  - Wireless mesh network can be directly connected to existing backbone network of already existing public agency's network
- Improved streetscape aesthetics
  - Single-space meter posts are removed

For more information on Cisco Outdoor Wireless Solutions, visit: http://www.cisco.com/go/outdoorwirelessnetworks

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