



ARRIS Takes to the Streetlights with Petra Systems to Help Power a Smart City Infrastructure Revolution

The worldwide movement to enable smart cities has brought municipalities, utilities and Service Providers together in an exciting effort to revolutionize mobility, security, energy, housing, water, waste processing and delivery of new public services. A smart city leverages the Internet of Things (IoT) in many ways such as to improve public safety, reduce traffic congestion and enhance community lifestyle. One company's particularly innovative solution reduces the operating cost of municipal lighting while simultaneously creating profitable carrier-grade communication opportunities for data services, mobile data offload and Wi-Fi connectivity.

The Challenge: Create revenue-generating streetlight networks for a new generation of smart cities

As part of its Smart City Solution, Petra Systems delivers remotely managed networks for existing streetlight infrastructure. For this technology provider, reducing a community's energy bill via smart streetlight poles is a worthy goal—but it's just the start. With more than 200,000 energy-saving systems installed worldwide, Petra's public-private partnerships help municipalities, utilities and transportation authorities transform their streetlights into networks with current and future capabilities in mind. This type of smart city requires a reliable infrastructure that delivers robust IoT networking to measure and manage pole-based lighting sensors. The streetlight infrastructure also controls devices for solar power injection to the grid and enables scalable, carrier-grade Wi-Fi connectivity so cellular providers can offer Wi-Fi Internet access and data offload services to subscribers and guests.

Benefits for Service Providers

- Reliable IoT network, comprehensive public Wi-Fi platform, mobile data offload
- Unlimited scaling across municipality areas of interest
- Full ARRIS hosting and NOC support
- Detailed performance analytics

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The ARRIS Solution: Reliable, scalable, hosted network services that enhance connectivity

To manage lighting control and power generation, as well as deliver carrier-grade Wi-Fi Internet connectivity, Petra Systems chose a hosted ARRIS Managed Public Networks solution. As part of this offering, ARRIS provides hardware, services and network management for the IoT backbone, mobile data offload, broadband and Wi-Fi connectivity, as well as full data center hosting, network analytics and NOC support. The solution delivers throughput and uptime guarantees, seamless authentication and billing synchronization. The complete solution also offers additional technologies and services including:

- Wireless access point (AP) technology by Ruckus
- Wireless Access Gateways (WAGs) deployed in carrier-grade data centers
- VPN infrastructure for secure connections
- Back office services for Wi-Fi
- Secure IoT communications from the lighting poles to the data center
- Customized, branded portals for guest networks
- Network Operations Center

The ARRIS Advantage: A uniquely powerful infrastructure that enables the smart city

Few vendors can rival the ARRIS hosting model that provides everything from secure onboarding of IoT devices and APs (installed by Petra field technicians), to Wi-Fi subscriber authentication for smart phones and other devices that access pole-mounted hot spots. Wi-Fi backhaul is crucial to the performance of the infrastructure, and ARRIS is recognized by carriers as a gold standard for consistent, reliable backhaul networks. For a fully comprehensive solution, the ARRIS hosted model also reduces capital investment, and optimizes data center security and data plane infrastructure.

The engagement began with a feasibility study, definition of requirements and design of a highly reliable IoT network wherein ARRIS secures data transmission traffic between devices on publicly open poles to a secure cloud based IoT management platform, managed by Petra. An ARRIS data center hosts Petra's wireless access gateways and VPN infrastructure.

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ARRIS Wireless Intelligence provides analytics and reporting tools so that Petra has a holistic view of the health of the system down to the status of individual APs. Data includes the number of subscribers and guests connecting through each AP, the types of devices they use, how much data they consume and how long they stay online.

The Result: Lighting that's cost-effective and a community that's connected

With ARRIS as its trusted partner, Petra Systems can deliver a new generation of managed networking infrastructure that enables smart cities - a market estimated to grow at a CAGR of 21.50% through 2023. Petra has rolled out several proof-of-concept projects with wireless carriers on multiple continents leveraging ARRIS world-class IoT networking, mobile data offload, public space connectivity and Wi-Fi access for subscribers of local carriers. Because of the success of the initial projects, Petra Systems plans to extend the infrastructure to tens of thousands of poles globally.

To learn more about how ARRIS enables Service Providers to deliver managed public networks that enable smart cities, please visit [arris.com/solutions/carrier-grade-wi-fi/](https://www.arris.com/solutions/carrier-grade-wi-fi/)

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