Critical Infrastructure Security

SIERRA WIRELESS®

How a security OEM leveraged new technologies to improve efficiency and quality of remote surveillance

The company's mobile and stationary security solutions enable military and commercial entities to leverage the latest technology innovations to perform risk analysis and evaluation of their sites.

QUICKFACTS

Customer Profile

Our customer is a leader in security systems for military and commercial installations. Its solutions combine the latest innovations in machine learning, AI, networking technology and sensors.

Objectives

- Develop a surveillance solution for both military and commercial installations.
- Develop a solution which would include stationary and mobile components as well as cloud infrastructure.
- Each solution required high-capacity processing and secure and reliable high-speed connectivity.

Results

- Drones are designed for harsh environments and operate autonomously
- Towers requires minimal footprint and includes sensors and solar power
- Cloud platform evaluates footage using latest technology innovations to evaluate risks
- Solutions perform much of the analysis and evaluation, eliminating the need for constant monitoring

Sierra Wireless Products and Services

- EM9190 5G module

According to the Department of Homeland Security (DHS), critical infrastructure services support a nation's economy, security, and health[1]. These infrastructure services include 16 sectors - from power, utilities, transportation, and communications to agriculture, healthcare, and financial services. With private companies owning more than 80% of this infrastructure, it is no surprise that all levels of government have concerns about both cyber- and physical security.

This problem isn't unique to the US. The Global Critical Infrastructure Protection (CIP) market[2], estimated at more than US $92 billion in 2018, is expected to grow to US $118 billion by 2028, a compound annual growth rate (CAGR) of more than 2.4%. Physical security will likely account for the largest share, 80%, of global expenditures.

Organizations increasingly recognize the value of video surveillance to support physical security initiatives. The global video surveillance market[3] is expected to grow from US $45.5 billion in 2020 to US $74.6 billion by 2025. This represents a CAGR of 10.4%.

BACKGROUND

Our customer wanted to utilize technical innovations in machine learning, artificial intelligence, networking technology and sensors to develop a surveillance solution for both military and commercial installations. The solutions included both stationary and mobile components as well as back-end cloud infrastructure. Both solutions required high-capacity processing and secure and reliable high-speed connectivity.

SOLUTION

The company designed both a tower and a drone to provide security footage for military and critical infrastructure sites. Artificial intelligence and sensors facilitate analysis and evaluation of all collected information. For example, by coupling video images with thermal maps, the system evaluates whether a human being or animal was captured on camera and sets an alarm if needed. This reduces staff time to monitor captured video and make risk assessments.

The towers have minimal footprints and include sensor and networking technology as well as solar power. Customers can deploy them quickly and they require minimal support even in harsh conditions. The towers perform real-time analysis, and filter data to optimize transmission payloads. Users can augment the towers with mission-specific equipment.

The drones are compact, portable, waterproof, resistant to elements like salt, and quieter than consumer drones. Customers can autonomously operate them for missions in excess of 90 minutes.

The company's cloud platform uses artificial intelligence, machine learning, and mesh networking to provide an accurate operating picture and integrates third-party data to provide complete situational awareness.

Both solutions are designed for military and commercial applications and incorporate the Sierra Wireless EM9190 5G module to enable real-time communications with the company's cloud infrastructure. The EM9190 is a global 5G module that supports both 5G NR sub-6 and mmWave technologies. It delivers unprecedented bandwidth and network performance while providing end-to-end data security.

BENEFITS

By integrating the latest in artificial intelligence, sensor technology, and reliable secure communications, the company developed highly sophisticated video surveillance technology ideal for military and critical infrastructure security.

"With our advanced technology and Sierra Wireless 5G modules, we've developed physical security solutions ideal for organizations that don't want to have to constantly monitor input feeds. Through sensors, our cloud platform, real-time processing and artificial intelligence, our solutions constantly observe, evaluate, and perform critical risk assessment that simply cannot be done by a human being," said a company development executive.

"Our solution constantly scans for risks. It is more than a camera attached to a tower or drone. With this technology, we can expand our security capabilities while we improve the quality of information to security teams on the ground."

1. https://www.cisa.gov/critical-infrastructure-sectors

2. https://www.researchandmarkets.com/research/68w2kr/critical?w=5

3. https://www.marketsandmarkets.com/Market-Reports/video-surveillance-market-645.html?gclid=Cj0KCQjwmIuDBhDXARIsAFITC_75LzlmDaGDAXada0BBUJI8-SE-B4wofdoXf062bJ68vAVtw1dmhoEaAsD5EALw_wcB

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> **– Company Executive**

About Sierra Wireless
Sierra Wireless (NASDAQ: SWIR) (TSX: SW) is the leading IoT solutions provider that combines devices, network and software to unlock value in the connected economy. Companies globally are adopting IoT to improve operational efficiency, create better customer experiences, improve their business models and create new revenue streams. Whether it's a solution to help a business securely connect edge devices to the cloud, or a software/API solution to help manage processes associated with billions of connected assets, or a platform to extract real-time data to make the best business decisions, Sierra Wireless will work with you to create the right industry-specific solution for your next IoT endeavor.

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