LOCH Wireless Machine Vision™ Platform

Millions of new wireless devices are finding their way into our homes, cars, factories, and cities every day. This vast array of smart, interconnected devices, broadly described as the Internet of Things (IoT), is fueling innovation in every aspect of society and is forecast to grow to 41.6 billion devices by 2025 and generate a whopping 79.4 zettabytes (ZB) of data, according to IDC[1]. For its part, IHS Markit forecasts the number of connected devices worldwide to grow to 125 billion in 2030[2]. In all, 95% of enterprises anticipate using IoT just as much or more in two years than today, expanding current use cases.

80% of new devices are wireless.[4]

The sheer volume of new wireless devices, together with the rapid adoption of 5G cellular, is already resulting in a new level of frustration and risk for organizations struggling to secure not only their own devices, but also identify other wireless devices in and around their airspace. With more employees, customers, and business partners connecting their devices to enterprise networks every day, the problem is accelerating as the attack surface expands exponentially.

But it's not just a 5G security problem. The proliferation of devices has also introduced a myriad of new operating systems, wireless protocols, and radio frequencies. And with the tremendous growth of 5G cellular devices ramping up, more organizations are discovering that a lack of visibility into all of these different wireless technologies can create a number of issues, including expensive overcharges and fraudulent data usage of their cellular device. Until now, organizations have had no way of comprehensively managing the full range of wireless devices, at any scale.

In response to these challenges, LOCH Technologies, Inc.™ is delivering a solution to manage security, performance, and cost for the full range of wireless technologies with its patented Wireless Machine Vision platform.

[1] Worldwide Global DataSphere IoT Device and Data Forecast, 2019-2023, IDC

[2] The Internet of Things: A Movement, Not a Market, IHS Markit

[3] 2020 IoT Signals Report, Microsoft

[4] WiFi 6:The Next Generation of Wireless, Cisco Meraki

125 billion connected devices coming[2]

9x increase in attacks on IoT devices[5]

95% enterprise IoT adoption[3]

Challenges and Risks in Managing 5G and Other Wireless IoT Devices

Wireless devices have become business-critical in many enterprise environments, yet organizations face significant challenges in managing them effectively. For instance, 97% of organizations admit to having security concerns when adopting wireless solutions. And, when it comes to cost and performance management, such as for cellular SIM card billing and network bandwidth, enterprises typically have no real-time visibility and control, whatsoever.

Active management for these devices is still immature, compared to traditional wired endpoints, which are managed with traditional endpoint management and security tools. This new shift to "wireless everywhere" has IT and security professionals increasingly anxious about how poor visibility and management is quickly becoming an enormous business and societal risk.

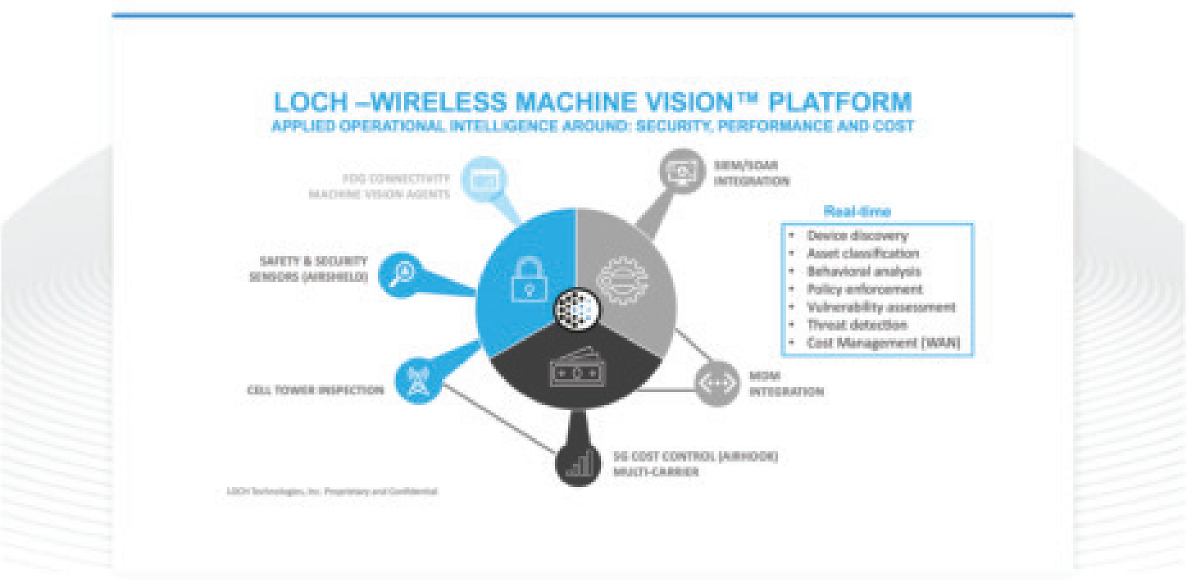
The stakes are too high when poor device security can lead to data breaches and network disruptions that can shut down a medical device, corporate network, or even the industrial control systems that provide the services we rely on every day. What, for example, are the human and financial costs associated with a ogue wireless device leading to the poisoning of a town's entire water supply or taking down a region's power grid?

Confidently and effectively deploying the wireless solutions that will usher in the next phase of business transformation will separate those who just survive from those who thrive. And to do that, organizations need to make sure that every wireless device is seen, actively managed, and secure.

[5] Kaspersky Reports More Than 100 Million Attacks Hit Smart Devices in H1 2019

LOCH Wireless Machine Vision Platform

LOCH helps bring order to this world of wireless chaos. With its patented Wireless Machine Vision platform, LOCH provides full and proactive management and security for all 5G, operational technology (OT), and IoT environments. Every connected device needs to be visible, manageable, and secure, regardless of the type of device, the protocol it uses, and who owns it. Whether for 5G, broad-spectrum IoT wireless, or Citizens Broadband Radio Service (CBRS) environments, LOCH helps customers manage security, performance, and cost for the full range of wireless devices. By providing full visibility and actionable intelligence on all devices, LOCH enables organizations to confidently embrace the new world of wi eless innovation that is driving the next generation of digital transformation.



LOCH –WIRELESS MACHINE VISION™ PLATFORM

APPLIED OPERATIONAL INTELLIGENCE AROUND: SECURITY, PERFORMANCE AND COST

Real-time

- Device discovery
- Asset classification
- Behavioral analysis
- Policy enforcement
- Vulnerability assessment
- Threat detection
- Cost Management (WAN)

Figure 1. The LOCH Wireless Machine Vision platform enables organizations to discover, inventory, monitor, and help secure ALL devices and ANY wireless network comprehensively and securely.

Support for Hyper-WAN (5G) Environments

Without real-time visibility, monitoring, and active management of 5G wireless devices, enterprises have no way of managing the risk and costs associated with them. There is no way, for example, to predict data usage, monitor device policy and behavior, or detect and remediate real-time threats to the environment.

To address this, the AirHook^{SM} service provides real-time visibility and comprehensive security, performance, and cost management for 5G cellular devices across all carriers. Round-the-clock visibility and behavior monitoring helps organizations ensure data usage and airtime costs align to policies, which are critical in identifying misuse, cost, and security issues. Organizations can now anticipate and control airtime costs with real-time visibility, instrumentation, and prescriptive guidance.

Benefits of the AirHook service

- Visibility and control of all Subscriber Identity Module (SIM) cards and their host devices
- Policy-based management of all device and network usage
- Report on data usage for all devices at aggregate, group, and per-device views
- Real-time pool balancing and management of device data usage
- Terminate high-utilization devices before they exceed capacity limits and cost overages
- Add and remove devices from any carrier network
- Identify and block access of suspicious devices
- Detect and remediate vulnerabilities and threats

Support for Multi-LAN (broad-spectrum IoT wireless) Environments

The inability to see and accurately identify every device in and around your environment can create blind spots and vulnerabilities that can lead to corporate espionage, data exfiltration, and security reaches.

The AirShield^{SM} service provides non-intrusive real-time visibility and comprehensive monitoring and protection for broad-spectrum wireless devices for IoT, Industrial Internet of Things (IIOT), Internet of Medical Things (IOMT), and OT environments, irrespective of operating system, protocol, or connection type. With its software-defined radio and ireless Deep Packet Inspection (WDPI) capabilities, AirShield monitors an organization's entire airspace to ensure the environment is protected against rogue devices, misconfigu ed devices, and previously-undetected wireless threats.

Benefits of the AirShield service

- Software-defined radio enables support for existing and futu e 5G cellular, Citizens Broadband Radio Service (CBRS), and radio frequencies specific to OT and IoT (e.g., 802.11, Bluetooth, Blue ooth Low Energy, Zigbee, LoRa, etc.)
- Complete asset inventory and classification p ovides real-time view of every device, its performance, and overall security posture
- Enables zero trust access control through behavioral analysis, anomaly detection, threat ranking, air isolation, and policy management
- Policy-based threat monitoring, detection, and remediation to support regulatory compliance
- Integration with enterprise access control, Security Information and Event Management (SIEM), Security Orchestration, Automation and Response (SOAR), and IT Service Management (ITSM) platforms to help security teams respond quickly

Easy	Comprehensive	Actionable
▪ SaaS solution makes deployment fast and easy ▪ Can be up and running in minutes not days ▪ Integrated with access control, service management, and security event platforms to fit your existing environment	▪ Software-defined radio enables future-proof support for broad-spectrum IoT wireless frequencies ▪ Real-time asset inventory and classification for every device, performance, and security posture ▪ Full monitoring and behavior analysis for policy-based management of cellular data usage, cost, and access control	▪ Multi-carrier 5G security, performance, and cost management ▪ Supports regulatory compliance and zero trust access control through behavioral analysis, threat ranking, air isolation, and policy management ▪ Integration with access control, ITSM, SIEM, and SOAR platforms helps respond to threats quickly and effectively

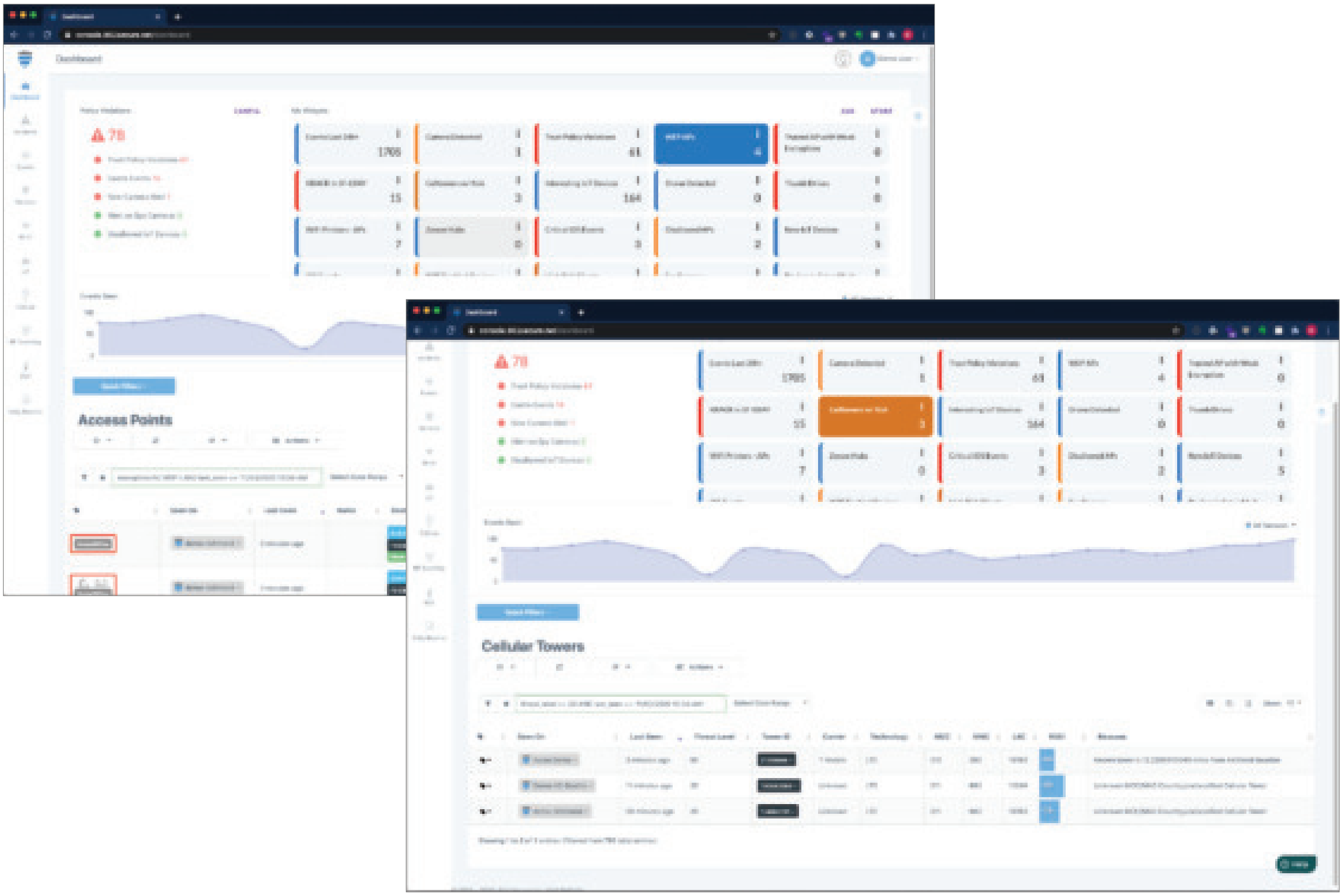


Figure 2: The LOCH Wireless Machine Vision Platform provides actionable intelligence and insight for all 5G cellular andbroad-spectrum wireless IoT devices.

In this new world of "wireless everything," organizations are finding new ways to ha ness the potential of wireless ubiquity and machine-to-machine connections to propel their businesses forward. But without strong assurances that the tsunami of new 5G cellular and broad-spectrum wireless IoT devices are effectively managed and secure, organizations won't be able to tap the enormous potential of wireless and will continue to handicap themselves with unnecessary business risk.

To address this, organizations need a holistic approach of seeing, identifying, and managing every wireless device across the environment. This is what we call "machine vision", and the LOCH Wireless Machine Vision platform was designed specifically for that purpose.

As the industry pioneer in wireless security, performance, and cost management, LOCH provides full and actionable intelligence on all 5G cellular and broad-spectrum wireless IoT devices that can help organizations confidently embrace the new world of wireless innovation that is driving the next generation of digital transformation.

LOCH

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