MAN MESH
Intelligent Core Software

EAN Code : 4712757159820

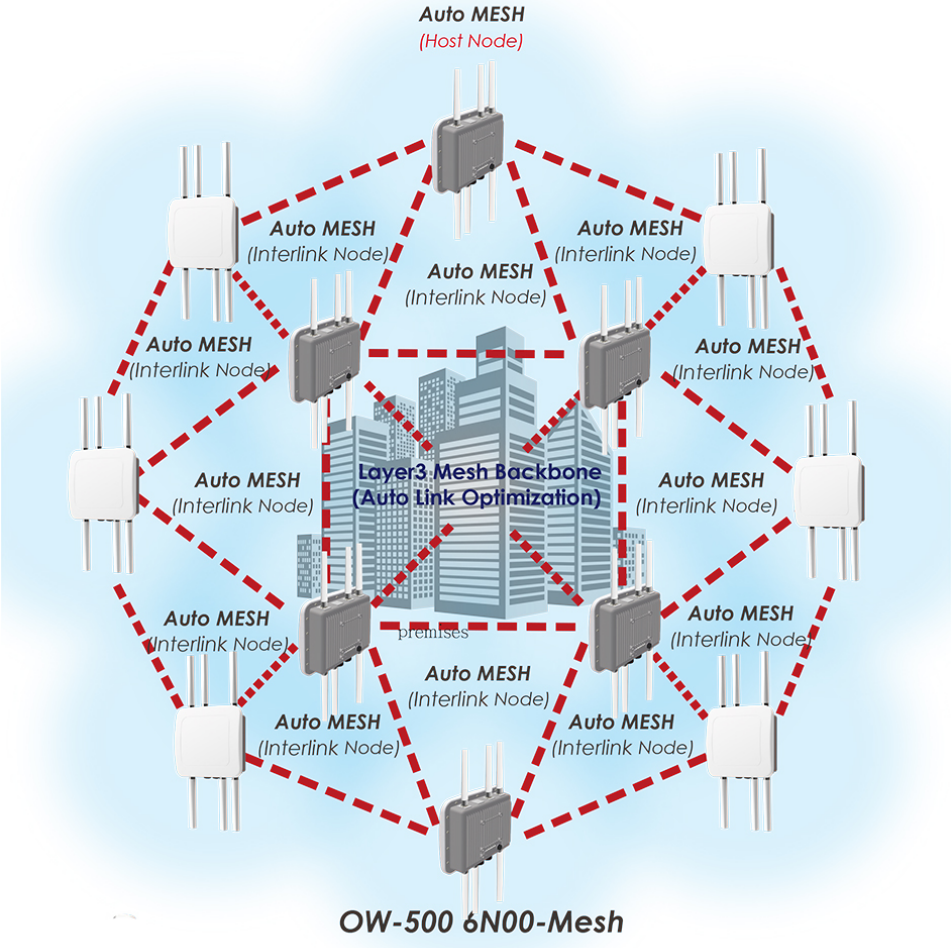
Cerio MAN-MESH

Activation License

Introduction

The **CERIO MAN MESH Intelligent Core Software Mode** provides Layer3 Mesh Backbone Auto Link Optimization, it's using simpler and smartest way to improve the connection quality of the wireless network which let a large number of users in the vast space can enjoy a stable quality wireless network. In addition, each node in the mesh wireless network system can be an independent, providing fast connection and a more stable wireless network. With Intelligent WiFi Mesh Topology, the wireless node will communicate with each other and can be set automatically, which greatly reduces the complicate setting procedure. **The MAN-MESH Layer3 Mesh Backbone Auto Link Optimization** also provides, when one of the wireless nodes fails or disconnected, the other wireless node in the mesh network can communicate with each other and recover the network connection automatically. Which is an excellent solution for infrastructure, surveillance, IOT and in-train backhaul. And for emergencies, rapidly deployable and robust communications between each member when emergencies are involved in difficult operations inside buildings, towers, hard-hit disaster areas or surrounded in forest fires.

Cerio MAN-MESH for Backbone Network Topology



MAN-MESH Highlight Features

Auto-Configuring Mesh Network

The **CERIO MAN-MESH Mode with Layer3 Mesh Backbone Auto Link Optimization** which provides user friendly and simpler setting configuration, Just complete the network settings of the Host node and you can automatically copy the settings to other Interlink nodes. It can extend the wireless network to areas that are difficult or expensive to connect via Ethernet cabling. The **CERIO MAN-MESH** provides **Intelligent WiFi Mesh technology**, Meshed APs self-configure and establish a high-performance, robust, and resilient network automatically, without any need for manual intervention or provisioning. Provide a full coverage wireless network without dead ends, no matter where you are, you can automatically and seamlessly connect to the optimal wireless signal at any time.

Multi-Channel Routing Protocols

Provides **Layer3 Intelligent wireless mechanism** and advanced proprietary routing protocols and algorithms continuously evaluate link performance by measuring a variety of factors, including signal strength, throughput, link cost, interference, and frame reception rates. Wireless APs take measurements individually and work together with neighboring APs to optimize overall capacity and client throughput. APs route traffic over different channels as needed to minimize per-hop performance degradation and maximize client performance.

Self-Healing Networking with Per-Flow Optimization

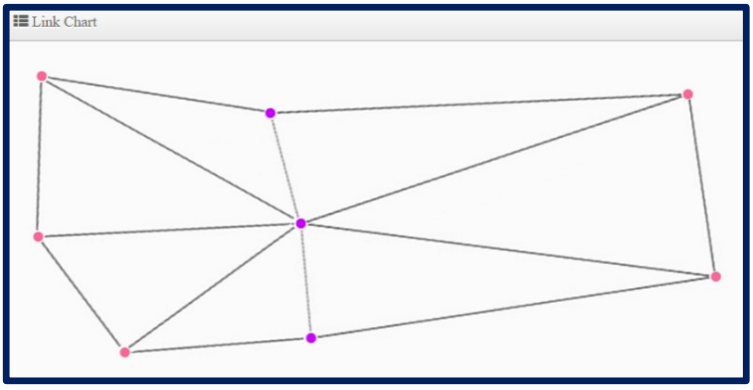
The Intelligent Mesh Network Self-healing technology can prevent network paralysis from occurring. Each node in the Wireless Mesh Network is connected and communicates with each other. When a node in a mesh network environment is failure through a wired or wireless interface, Mesh will dynamically reconfigure and find the best link and automatically detect and forward traffic to other node link AP devices with Internet network connectivity. To ensure that the connection in the network can continue normally, and will not encounter service interruption.

Support MAN-MESH Multi-Channel WAN Backup Function

When using LAN wired connecting multiple MAN-Mesh APs of WAN for configuration, Mesh will dynamically reconfigure and find the best link through the WAN / Internet route, automatically select one of the best available WAN to access the uplink connection. Therefore, a backup WAN architecture is generated for multiple paths of multiple WANs in the environment. When any WAN in the environment is interrupted, it can be backed up to ensure the Internet connection.

Status Link Chart

The MAN-MESH system status can display link chart and view the connection information of MESH and the signal information of MESH equipment, including the transmission rate of the Mac address, TX / RX and the RSSI value, etc., so that managers can grasp the connection status of MESH Network at any time.



CERIO MAN-MESH Advantage

- The Mesh Network no geographical limitations : Provides a mesh environment including stationary surveillance or node terminal device access by wired, mobile user wireless access and point-to-point connection to AP stations in remote areas to extend mesh links
- In addition, it supports Mesh AP backbone interconnection capabilities, and it can be multi-function wireless AP station for wireless clients access
- The wireless AP supports 2.4GHz Radio0, 5GHz Radio1 and the 5GHz Radio2 supported by Tri-Band models, each radio support 16 groups of Multiple-VLAN (ESSID),The Tri-Band models up to 48 groups of Multiple-VLAN (ESSID)
- Support virtual network tagging function (VLAN Tag), each group can use different VLAN tag
- Support multi-node smart link capability, automatic detection of each node, network optimization and network self-healing function, always ensure that the network connection will not be interrupted at any place. It can improve work efficiency and deploy network connection quickly, very convenience and saving time.
- Real-Time Environment Monitoring and Routing : Constantly scan the air to monitor mesh link. If a better link is available, it will automatically re-route the mesh path to optimum mesh network quality
- Supports routing and across-network interface interworking IP address identification. Through the IPv4 Bridge function, the different network access interfaces of each MAN-Mesh AP under the routing layer include wired LAN, wireless Radio and other IP addresses of each different interface can access each other. And support Static Peer setting. For example, LAN PC server and other devices can be fixed in a network environment with multi routing links and can be reliably accessed
- DHCP server and DHCP Relay (DHCPR) relay service in the same or different network segment, allows DHCP data to be successfully exchanged between the DHCP client and the DHCP server
- NAT network IP address translation function designated as a WAN side by wire or wireless interface, When Mesh network is connecting, the administrator can enable this NAT application function for a specific MAN-Mesh node host in the environment to construct a more diverse and flexible mesh network environment
- Supports intelligent routing and multi-channel selection of Auto Mesh Link function, Mesh connection between multiple channels based on signal quality, link optimization, hop-by-hop performance, transmission efficiency, etc.
- Mesh AP supports multiple Radio, each Radio supports independent Mesh AP interface settings, and supports IPv4 and IPv6 MAN-Mesh IP address format applications
- Support host multi-hop setting, corresponding setting for available channels, through the "host node" can be found in the Mesh environment can be used in multiple fixed channels in advance,in order to create and assist other "interconnected nodes connection
- Support MAN-Mesh Force Link priority interconnection setting, according to the MAC address designation method of MAN-Mesh equipment, set priority to specify link host MAN-Mesh AP, to make the construction of Mesh network environment more flexible and practical
- provides a wireless connection distance setting by quickly function, for the actual required distance to solve the complicated wireless parameter settings required for outdoor remote wireless connection
- MAN-MESH mode supports link chart and status display functions, such as WI-FI multi-angle positioning relative IP address connection mesh node display, MAN-Mesh neighbor and routes / redistributed routes information, and each wireless Radio connecting corresponding MAC address information, connection rate and RSSI quality etc, to facilitate the administrator to grasp and understand the relevant information between each of the Mesh construction environment and each next-note Mesh
- Through the CAP management mode, you can quickly add each MAN-Mesh host in the environment that needs to be monitored and managed. Through the device list and construction, you can quickly grasp the basic information such as the connection time and firmware version.

MAN-MESH Other Functions

Wireless Feature

- Supports packet transmission time control through Slot Time and ACK Timeout interval control functions
- Supports Beacon Interval and performance control DTIM Interval for client power efficiency
- Supports Location Tracking function, for the wireless client location information to the server for analysis
- Supports auto channel scanning function, automatic scanning the most undisturbed and suitable wireless channel in the field environment
- Supports IEEE802.11f IAPP and IEEE802.11r and IEEE802.11k Fast Roaming
- Supports wireless IGMP the v1/v2/v3 function, routing multi-cast stream to more efficiently manage media traffic
- Provide RF on/off and scheduling function for easy control RF radio on/off time table.
- Supports hide SSID to prevent unauthorized users from intentionally accessing the wireless network
- Supports the latest 11ax hardware device and support WEP, WPA/WPA2 /WPA3 Personal, WPA/WPA2/WPA3 Enterprise and 802.1x connection encryption methods and can register a RADIUS authentication server Wireless access control list (ACL) by MAC Address
- Client Isolation and Client Connection limitations
- Support IEEE802.11e WMM QoS.
- Built-in software supports antenna calibration or adjustment display, auto detect the RSSI signal strength of each remote wireless terminal connected to the local or other wireless terminals, and real-time TX/RX Data Rate information, helping the installer adjustment of antenna.

Network / Management

- Supports IEEE.802.1Q VLAN Tag, total up to 16 of multiple-VLANs supported, each SSID supports 802.1q VLAN Tag standards, supporting up to 4096 group VLAN Tag capability
- Supports IEEE802.1d Spanning Tree Protocol
- Web-Based supports HTTP / HTTPS and advanced CLI via Telnet and SSH interface management functions
- Supports NTP network time automatic synchronization and manual setting function
- Support SNMP v1/v2c/v3, MIB II. Also supports SNMP Traps to a list of IP addresses
- LED light control functions, allowing administrators to turn on/off the blinking LEDs
- Support remote Firmware Upgrade via Web , Reset to Factory Defaults. Detect connection signal, transmission rate, encryption and other information display.
- Support Ping Watchdog function, which automatically monitoring device operations and reboot of the device
- Built-in network test tool, it can enter the remote IP address / URL address and response time settings for PING test, the administrator can set the destination host address and Max Hops for routing tracking
- Supports Auto reboot setting function, can schedule Auto Reboot by Hour/Daily/Weekly setting
- Real-Time Online Users Traffic Statistic Reporting and users connection status ， and support Syslog and Event log
- Provides Traffic Monitor and Graphical GUI Status Interface for Network and Radio Overview. Detection of connection signal and transmission rate and encryption and other information display for administrators to do comprehensive analysis and manage

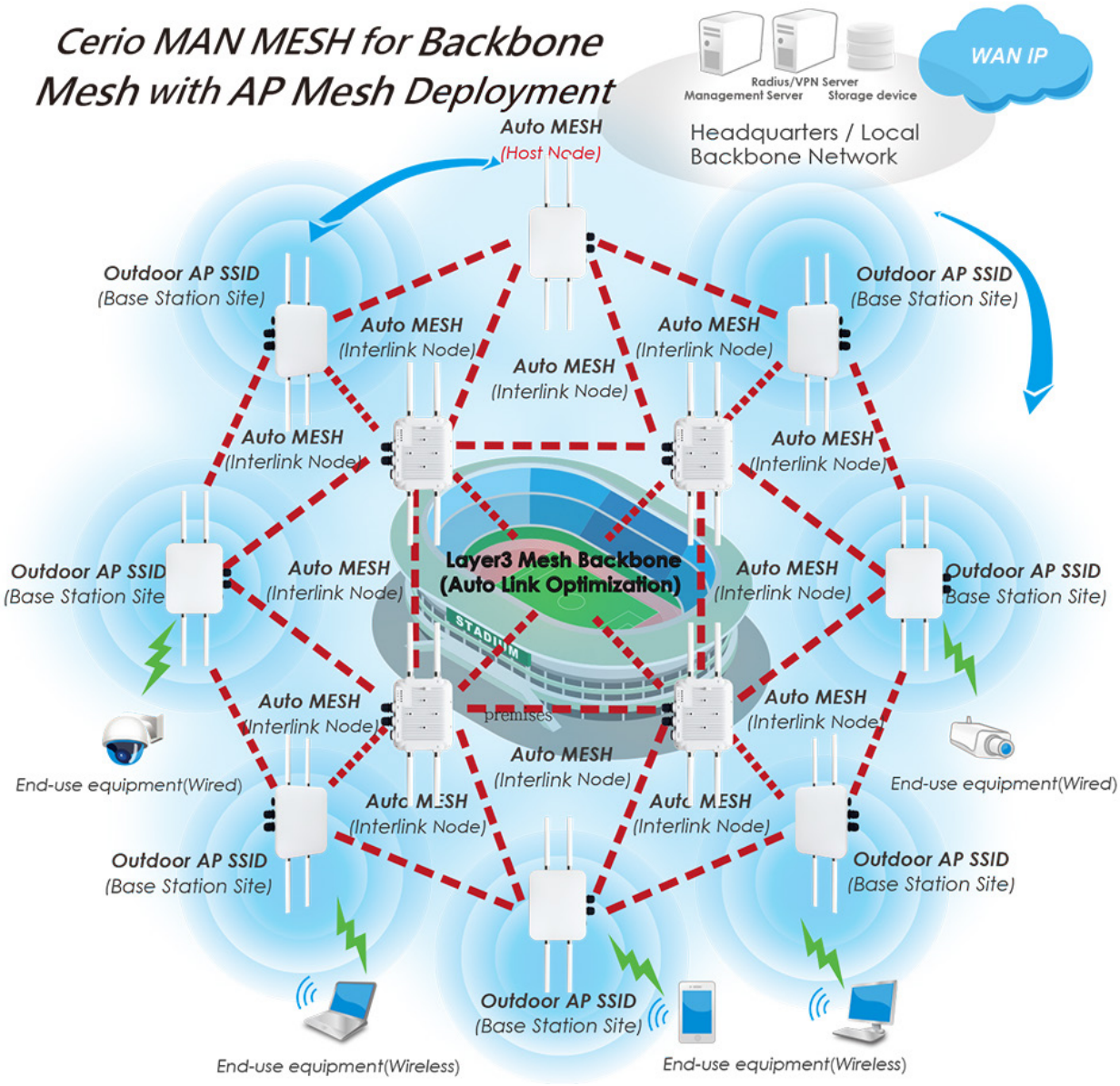
MAN-MESH Intelligent Software Core Product Application

1. Wireless Man Mesh for Backbone Deployment

When using MAN-MESH equipment, In addition to the multi-radio AP Station (Access Point) that can be for more wireless clients. Also built-in the MAN-MESH Software Core provides Intelligent Mesh Backbone Auto Link Optimization Meshed APs self-configure and establish a high-performance, robust, and resilient network automatically. Provide a full-coverage wireless network without dead ends, no matter where you are, you can automatically and seamlessly connect to the optimal wireless signal at any time.

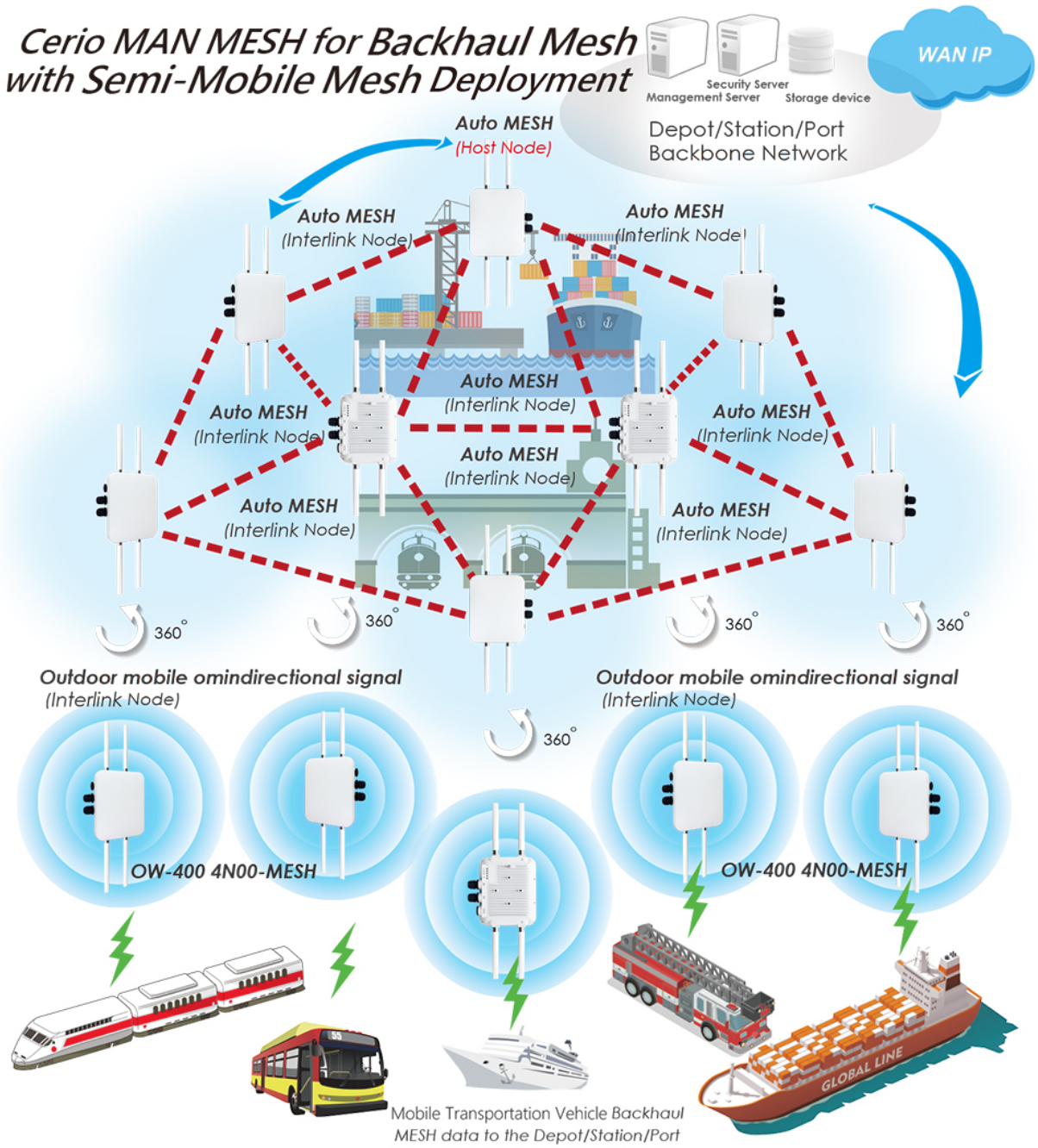
2. Wireless Man Mesh for Backbone with Access Point Deployment

In addition to the deployment of wireless backbone MESH AP network applications, it can also be used as an AP Station to connect wired or wireless devices to the terminal. For example, the CERIO outdoor MESH AP external N-Type equipment, the antenna connector can be freely matched with Omni Antenna to meet the deployment of a full range of wireless backbone networks.



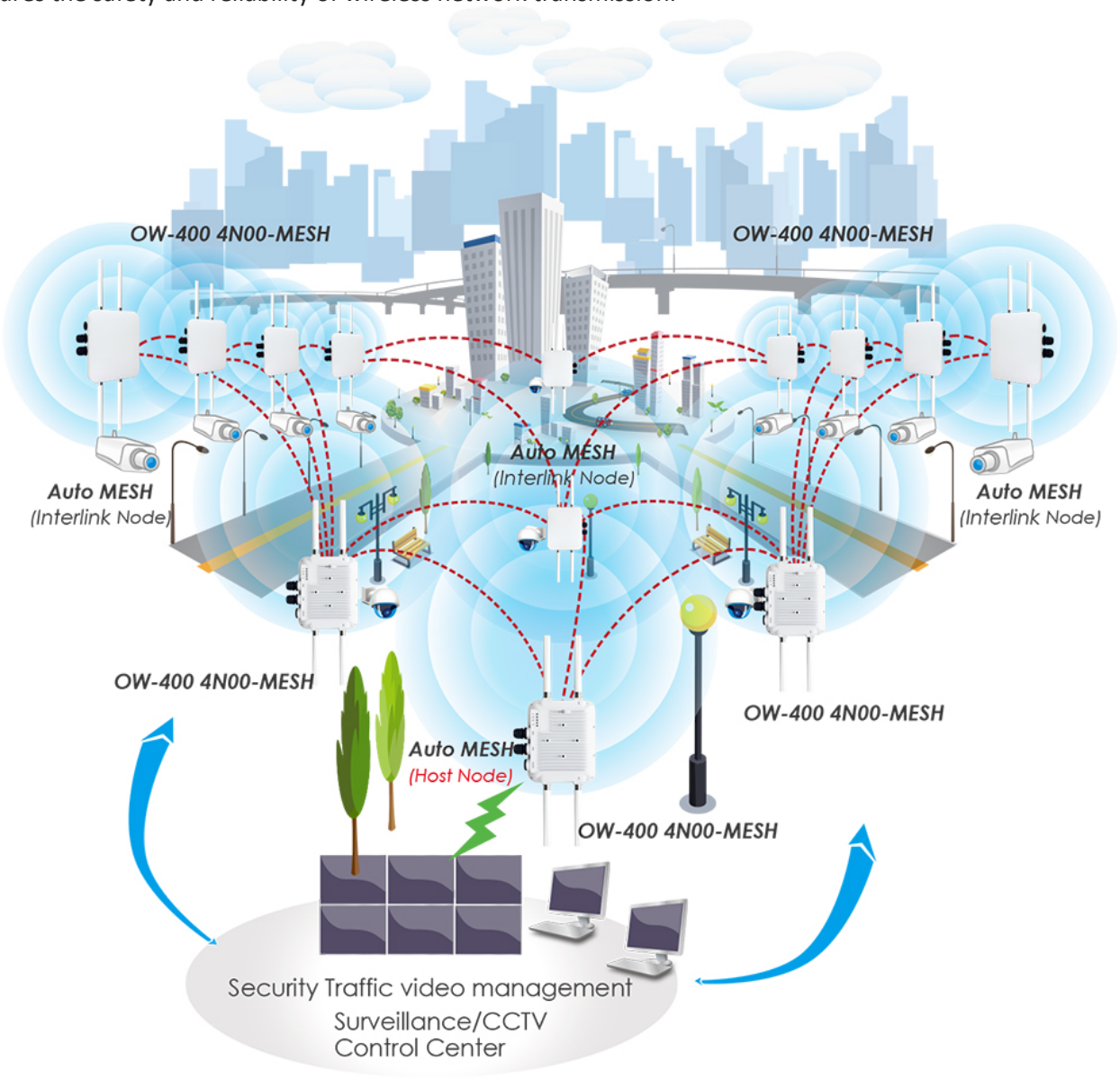
3. Wireless Man Mesh for Semi-Mobile Backhaul Deployment

The MAM-MESH Outdoor CPE/AP, It's the perfect solution for backhaul deployment of Semi-Mobile mesh network, such as data transmission of public transport system (ex. Railways, Ships, Bus, MRT, Gondola, etc.), through this smart wireless mesh network, which can collect and transmit information in real-time, so that control center can do security monitoring and management. This MAN-MESH equipment built-in wide-area angle directional high-gain antenna can be connected to any Ethernet device to easily build short- or long-distance wireless mesh network applications at the edge site, such as Warehouse and factory incoming/outgoing vehicle, construction area safety monitor management and so on.



4. Wireless MAN-Mesh for Intersection monitor Backhaul Deployment

CERIO MAN-MESH Wireless Mesh Network (Mesh) is the best solution for mission-critical applications such as wireless video surveillance and backbone transmission of network services. It can completely solve any difficulties in the network architecture environment that needs to provide wired network nodes. When in certain large areas, such as intersections in streets or public video surveillance equipment which using distributed mesh wireless network for data transfer back application. By using the Tri-Radio MAN-Mesh equipment supports 3 radios and can be used with built-in directional antenna, external Omnidirectional or Directional antenna to achieve long-distance wireless or multiple wireless link mesh topology, and using Mesh architecture for network planning which can easily achieve the mesh routing backup. Intelligent mesh network environment can provide multiple backhaul mechanism paths in each mesh node to achieve uninterrupted connection paths. That's when every 5GHz Mesh WiFi node and its wireless link are interrupted for no reason, they can seamlessly reconnect through different paths to resume fast data transmission. So it ensures the safety and reliability of wireless network transmission.



Cerio Wireless MAN-Mesh for Intersection monitor Backhaul Deployment