

MeshScape[®] PRIME

MeshScape[®] PRIME is Millennial Net's fifth generation high-end wireless mesh technology that delivers OEMs and system integrators all of the software, hardware, and tools to quickly and cost-effectively develop and deploy embedded wireless sensor networking applications. It uses an extremely efficient networking protocol to achieve the highest performance in reliability, power efficiency, scalability, and responsiveness.

MeshScape PRIME Features

MeshScape OEM is an optimized industrial-class wireless mesh network that provides more robust interference resistance, higher scalability in real world environments, and lower power operation:

- **Virtually-On** technology allows all network nodes to run at low power for battery operations over several years
- **Decentralized Distributed Dynamic Routing (D3R)** techniques form a self-configuring, wireless mesh network. D3R uses a node-initiated network formation to enable efficient topology discovery and facilitates network re-formation (required in ever-changing RF environments) by applying "best route" information
- **Active Frequency Hopping** avoids potential interferences for robust operation in highly noisy environments
- **Low Latency** capability reduces the end-to-end packet delivery time to below seconds within a multi-hop environment, even with a battery-operated mesh node
- **Highly Flexible Addressing** eases installation and commissioning for large and complex networks.
- **Peer-to-Peer Communication** to enable direct node-to-node communication and bi-directional communication with high reliability.
- **Full set of APIs** to enable customers to easily add customer applications.
- **Platform Independent** to adopt to customer-preferred hardware platforms, including MSP430, 8051 and others as well as multiple radio platforms, including IEEE 802.15.4, 433MHz and 900MHz ISM bands.

MeshScape OEM Benefits

- **Bi-Directional Data Reliability** based on D3R, which implements both fast data re-routing after link outages and frequency hopping to increase interference resistance. Communication is optimized for bi-directional control applications as well as unidirectional sense-only applications.
- **Advanced Power Management** delivers low latency communications using conventional batteries for several years on all network nodes including mesh nodes and coordinators, takes advantage of new energy harvesting technologies to extend battery life indefinitely, with packet delivery latency still measured in milliseconds.
- **Greatly Enhanced Scalability** based on D3R, practically supporting multiple times the number of nodes in a wireless mesh network and the number of network hops in real-world environments compared with other technologies.
- **Reliable Peer-to-Peer communication** delivers the capability for network nodes to send and receive packets directly and reliably to each other without requiring a coordinator or gateway.
- **Multiple Network Joining** delivers the capability for a node to become a part of multiple networks simultaneously, giving the application the freedom to create and manage subnets in any combination.
- **Extremely rapid mesh reconfiguration** supports mobile and other applications requiring fast reconfiguration of the mesh network.
- **Order of Magnitude Greater Total Network Data Transport Capacity** compared with other alternatives through frequency hopping across multiple channels.

Try it for Yourself

Setting up a wireless sensor network is fast and easy with the MeshScape PRIME Reference Kit. You can prototype your application in a matter of hours.

To order a Reference Kit or to learn more about our products and services, call (978) 569-1925 or e-mail us at info@millennialnet.com



285 Billerica Road
Chelmsford, MA 01824
Tel.: (978) 569 1925
info@millennialnet.com

www.millennialnet.com