Millennial Net

There is only one wireless sensor networking system that really works.

MeshScape™

For large, industrial- and commercial-grade networks that work in your environment, you need a system that supports your real-world requirements—all of them. The MeshScape™ wireless sensor networking system delivers the highest performance in scalability, reliability, responsiveness, and power efficiency.

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Scalability

MeshScape's highly efficient network protocol generates the lowest amount of overhead in the industry, enabling the highest scalability. Millennial Net regularly deploys large scale networks—hundreds of nodes—in real customer installations. In wireless sensor networking, the network's ability to scale to a large number of nodes is dependent on its ability to minimize packets needed to create and maintain route path information. In a completely static environment, other protocols may scale relatively well. In the real world, however, increased environmental dynamics generate more overhead affecting the actual scalability of the network. The efficient MeshScape protocol generates minimal route path packet overhead for maximum scalability.

Responsiveness

In order to monitor and control dynamic systems, the network must be able to respond to changes in the topology due to movement of sensors, addition of new sensors, and changing environmental conditions. The MeshScape system is highly responsive to mobile sensors and dynamic environments. In a completely static environment, most protocols would see comparably high responsiveness. In the more realistic environment of dynamic conditions, however, MeshScape provides the highest level of responsiveness in the industry. Unlike other protocols that require route discovery for the entire network to react to changes in the network's topology, MeshScape performs discovery at a local level. This reduces the number of discovery packets generated, especially for large and/or dense networks and minimizes network latency due to self-healing.

Reliability

Reliable network connectivity is essential. MeshScape networks offer the highest reliability of data delivery—from sensor to application host—in the industry. MeshScape ensures packet delivery from sensor endpoint to the gateway by using hop-by-hop packet acknowledgement. In dynamic RF environments, if a primary route path is impaired, the network will automatically revert to a secondary route path. Unlike other routing protocols that drop a data packet when it can't be delivered and simply send back an error message, MeshScape rolls back both the data packet and the responsibility for transmitting it through the network until an alternative route is found, ensuring delivery.

Power Efficiency

Without power efficiency, many of the cost-saving benefits of wireless sensor networking can be lost to battery-changing maintenance. The MeshScape system offers a power-efficient solution allowing all nodes to be battery powered, enabling networks to run on coin cell batteries years. The MeshScape protocol generates minimal packet overhead for high power efficiency. End nodes and mesh nodes are optimized to be actively listening or transmitting for minimal time periods to conserve power. While most solutions enable end nodes to sleep for power conservation, MeshScape supports sleep mode for mesh nodes for further power optimization.

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Commercial- and Industrial-Class Wireless Sensor Networks

Every Step of the Way

No one understands your business and application better than you do. But adding a wireless sensor networking component to your application can be complex and time-consuming. We know this because no one understands wireless sensor networking better than Millennial Net. That's why successful deployments demand not just a supplier with a solid product, but a partner that will add value to every step of the process from evaluation to development and integration to deployment and support.

Evaluation

The evaluation phase sets the stage for the entire development and deployment process. In addition to evaluating wireless sensor networking systems in general, this process begins to uncover the specifics of how wireless sensor networking will be incorporated into your unique application. That's why, in addition to offering Reference Kits for fast prototyping, Millennial Net works closely with you to help you evaluate the complete solution through feasibility assessments and high-level application requirements definition.

Development and Integration

Millennial Net has developed a set of best practices and tools to help you through the development and integration process to help you maximize your development resources. We'll work with you to help characterize your application, identify the network design drivers, and develop detailed requirements. We can work with you to identify integration requirements and resources. We also offer custom hardware and/or software development services.

Deployment

We understand that the product isn't complete when development is done, it needs to be successfully deployed in the field. Millennial Net will work closely with you to ensure successful deployment and ongoing maintenance of your wireless sensor networking application.

MeshScape enables OEM manufacturers and system integrators to capitalize on the cost-efficiency, value, and new opportunities that wireless sensor networking can bring to their markets.

MeshScape is the only wireless sensor networking system that can reliably scale to hundreds of nodes with extremely low power consumption—a key requirement of commercial and industrial applications.

From large commercial buildings to harsh industrial environments, MeshScape is the proven choice for wireless sensor networking.

Try It For Yourself

Setting up a wireless sensor network is fast and easy with the MeshScape wireless sensor networking reference kit. You can prototype your application in a matter of hours.

For more information, visit www.millennialnet.com/refkit.

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Millennial Net develops commericial- and industrial-class wireless sensor networking systems that enable OEMs and systems integrators to quickly and cost-effectively implement wireless sensor networks. These networks enable the remote monitoring and management of critical devices while providing data to enable more informed decision-making, better control and increased revenue opportunities. Millennial Net's patented ad hoc, self-organizing wireless sensor networking MeshScape™ system leads the industry in power efficiency, support for dynamic systems and mobile sensors, reliability, and scalability. Millennial Net also leads the industry in real-world deployments with networks installed across commercial building and industrial environ-ments. Millennial Net is backed by top-tier venture firms and is headquartered in Burlington, MA.

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