



BleedIO Tech

for Smart Facilities

BleedIO Tech's netMESH™ SaaS platform connects where other networks fail, allowing you to get more from your existing IoT infrastructure

Despite the promise of IoT, businesses and cities consistently struggle with connectivity solutions that are unreliable, insecure, and incompatible - making it difficult to extract real value from your connected devices. netMESH™ allows you stop thinking about the connectivity and begin thinking about the wealth of information about your smart facility that netMESH™ makes visible to you. Start focusing more on optimizing your energy consumption, security, foot traffic, and more by putting your existing IoT infrastructure to work as business intelligence nodes. There's no shortage of reasons to love netMESH™ from BleedIO Tech



Interoperability Algorithms: Unique methods and algorithms that enable seamless communication between BLE mesh devices from different manufacturers and chipsets.



Energy Optimization Protocols: Innovative protocols and techniques that significantly extend battery life and improve energy efficiency in BLE mesh networks.



Security Enhancements: Advanced security mechanisms specifically for BLE mesh networks, including encryption methods, authentication processes, and access control systems.



Real-Time Monitoring and Management Tools: Unique functionalities specific locations and real-time monitoring and management for asset oversight and process diagnostics.



Integration Frameworks: Proprietary frameworks and tool kits that facilitate that easy integration of diverse devices into a unified BLE mesh network





Software & Platform Features

Platform - netMESH™ SaaS by BleedIO Tech

Hosting - Edge-first, cloud-optional deployment architecture

Data Handling - Local data aggregation with optional edge analytics

Device Management - Web-based console for device provisioning, tracking, diagnostics

Integration APIs - RESTful APIs & MQTT broker compatible

Analytics - RSSI-based location logic, telemetry capture, and environmental data

Firmware Management - OTA updates for devices via mesh propagation

Security & Privacy

Encryption - AES-256 end-to-end encryption

Authentication - Secure provisioning and device authentication

Network Integrity - Closed network model; no reliance on internet or cloud

Resilience - Self-healing mesh ensures continuous operation

Privacy by Design - Data localized at the edge; minimizes cloud exposure

Technical Specifications Overview

Network Type - Bluetooth Low Energy Mesh (BLE Mesh)

Architecture - Decentralized, “hubless”, device-to-device (D2D), self-healing & self-routing

Deployment - Plug-and-play / “Network in Advance” pre-provisioned deployment

Network Size - Up to 32,767 nodes per mesh

Range Extension - Multi-hop relay with no central gateway required

Interoperability - Supports BLE 5.0+ devices (legacy + new); backward & forward compatible

Data Routing - Flooding & managed message relay system

Latency - Ultra-low latency (~milliseconds scale) within mesh

Hardware Compatibility

Supports:

- BLE SoCs from Nordic, Silicon Labs, STMicro, TI
- Android/iOS smartphones and wearables with BLE 5.0+
- BLE-ready sensors, buttons, badges, tags, door locks, etc.

Custom Hardware:

- BleedIO Tech offers “mesh-read” custom hardware for specific use

