



Senet Managed Network Services for IoT

Rapidly deploy, scale, manage, and commercialize Low Power Wide Area IoT network connectivity anywhere in the world

Senet's Managed Network Services for IoT (MNSi™) is a cloud-based service that enables operators and other connectivity providers to rapidly deploy LoRaWAN™ network services on their physical assets (towers, buildings, etc.) and offer Low Power Wide Area Network (LPWAN) connectivity to their customers.

Designed to meet the scalability requirements of the Internet of Things (IoT), MNSi provides Operations Support System (OSS) and Business Support System (BSS) services to securely connect, activate and monitor millions, and ultimately billions of IoT devices in a multi-tenant and multi-vendor environment across a broad range of applications and business models.

The Only IoT Network Operating System Built by an Operator for Operators

Senet builds, deploys and operates its own LoRaWAN Network Operating System, providing OSS and BSS platforms to speed LoRaWAN commercialization worldwide. We are unique among IoT connectivity providers in that we have extensive experience in deploying and operating

low-power wide-area networks, and the technical expertise to create the critical core technologies required to provide the optimal solution with the best cost structure for long term competitiveness.

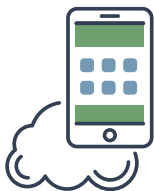


Senet Network Architecture

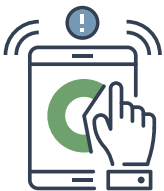
Senet provides the latest tools and technology for creating network reliability and service level excellence. The Senet network architecture has three separate domains that are designed to provide connectivity, data streaming, and device management services. Each domain is segmented by operational responsibilities and administered independently.



Senet Domain: consists of the network server and packet core, including features that manage the Radio Access Network (RAN) such as gateway management and End Device adaptive data rates (RF tuning). These features deliver reliable network data streaming and efficient network utilization. The Senet domain can also provide Application Controller and Join Controller functionality as required by the application provider.



Network Operator Domain: where all administrative (customer, application, gateway and End Device onboarding), network planning, performance/network analytics and network troubleshooting features exist.



Application Provider Domain: used by the application provider to manage and monitor the health of the application on the network. An Application Provider Portal is used to manage End Devices (device authorizations, activations and deactivations) and gateways that are deployed in support of the application. It is also used to convey billing information consisting of device and network utilization.

MNSi Engagement Profile




Senet deploys, operates and maintains its cloud-based LoRaWAN Network Operating System, providing OSS and BSS platforms as a service for operators.

Through this engagement Senet supplies:

-  The multiple management domain Network Controller
-  The Application Controllers and Join Controllers constructs
-  The Network Provider Portal
-  The Application Provider Portal

Network Operators

Network operators deploy and maintain the Radio Access Network (RAN) and provide Network-as-a-Service (NaaS) directly to their customers. MNSi enables operators to supervise the network infrastructure, manage connectivity, and control roles and access rights.

-  Deploys and maintains the Radio Access Network (RAN)
-  Is responsible for customer acquisition, customer pricing and billing
-  Provides network provisioning of the Application Controllers and Join Controllers in support of expanding its customer base

Senet Network Server Features

Senet's cloud-based Network Server is scalable to hundreds of millions of devices and deployed in efficient, right sized, cost effective increments. This architecture allows the MNSi service to be expanded over time as the End Device and gateway volumes are increased and is cost optimized and aligned to the network operator's capacity requirements.



Cloud Deployed

Web-scale for efficient, redundant, and scalable operations



Secure

Built in security as a fundamental part of the architecture



Support

Interoperable with a wide variety of commercial LoRa[®] gateways



Resilient

Architected for fault tolerance and high availability



Cost Effective

Supports scale-up and scale-out without impacting cost efficiency

Features and Tools Desinged for Commercial Networks

Our Network Server has a suite of features and task oriented tools developed over years of commercial network operation experience.

The Network Server functionality includes:



Health, Status & Performance



Network, Applications & End Devices



Configuration / Provisioning



Alerting, Escalation & Ticketing



Network Planning & Expansion Suite of Tools

We are Building the Largest Global LoRaWAN Network

Senet has established a model of ecosystem participation and partnerships to deploy, connect, manage and monetize millions, and ultimately billions, of low-power, low-cost sensors - across the globe.



The Senet Low Power Wide Area Virtual Network (LVN™), allows end-device connectivity and application service on any LoRaWAN Radio Access Network (RAN) network using Senet's operations support system (OSS) and business support systems (BSS). Included in the LVN are Senet's Radio Access Network, networks running on Senet's Managed Network Services for IoT (MNSi™) and other RAN providers contributing to the LVN buildout.

The LVN allows application and solution providers to expand their service offerings beyond traditional areas of operation, unlocking opportunities for regional and global expansion. RAN Providers participating in the LVN benefit from their investment in the infrastructure by sharing in the revenue generated by all end devices connecting to their Radio Access Network.



Service & Support

Senet's experienced network operations team provides 24x7 monitoring and support to ensure the highest levels of reliability, responsiveness and an optimized user experience. As a trusted partner, the Senet team is available to assist with all aspect of network operations.



Senet is a Founding and Contributing Member of the LoRa Alliance™. LoRaWAN is the open global standard for carrier-grade LPWAN connectivity, designed to connect low-cost, battery-operated sensors over long distances and offers unique benefits in terms of bi-directionality, security, mobility, and geolocation.

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