



Isotropic™

Connecting the Planet

ISOTROPIC NETWORKS' VNO SERVICES

With more than 15 years of experience supporting virtual network operators (VNOs), Isotropic has developed a flexible service offering that puts you in full control of your bandwidth, budget, and business.



Why Become a VNO?

For many companies, becoming a VNO is an excellent way to provide customers with high-quality bandwidth without incurring the steep costs of owning telecom infrastructure. VNOs buy wholesale capacity from service providers that they can then sell to their own customers—no need to own a teleport or even a hub to offer high-quality services.

As a result, non-governmental organizations (NGOs), resellers and service-conscious operators all traditionally benefit from controlling more of their business destiny through being a VNO.

Getting Started

Although you don't have to maintain telecom infrastructure yourself, as a VNO you will want to carefully vet the capabilities of the service provider from which you buy capacity. Consider the following when assessing a potential service provider:

- Do they own a hub and teleport? Where is the teleport located? Does it cover the areas I need?
- Do they employ and maintain a strong commitment to the latest technologies?
- Can I count on reliable service from this provider? Do they have a backup plan in case of failure? What about available technical support?
- Can they grow with me as I need to grow? Or will I need to find a new service provider after a few years of growth?



Isotropic's VNO Services

Take full control of your satellite network without the high cost of underlying radio frequency infrastructure with Isotropic's VNO solutions powered by ST Engineering iDirect technology. Leverage Isotropic's extensive service infrastructure; expertise; and world-class, 24/7 support with our highly scalable solution to facilitate the deployment of your Ku-band VSAT services.

With Isotropic's VNO solutions, you gain access to powerful tools for client management, such as visibility of real-time statistics; access to the award-winning Datadragon™; control of remote site configurations, like quality of service (QoS) and filtering; and the ability to create group QoS (GQoS) profiles that allow for true end-user service level agreements (SLAs).

"As a VNO, we can now easily shrink and grow our space segment to meet customer demand as needed. This is a much more compelling financial model for us, especially as COVID-19 continues to make markets unpredictable. We're excited to partner with Isotropic, because with them we know we can expect the same exceptional customer support we provide for our own customers."

– Dario Facca, President of DataDrill

Why Isotropic?

With more than 15 years of experience supporting VNOs big and small, Isotropic has developed products and solutions that go beyond basic bandwidth plans. Our flexible service offering puts you in full control:

- **Employ the latest technologies:**
At Isotropic, we offer the best uptime in the industry thanks in part to our focus on state-of-the-art technologies and our world-class teleport in Lake Geneva, Wisconsin.
- **Operate without restrictive contracts:**
Use bandwidth only when and where it's needed. We do not require rigid, never-ending contracts.
- **Manage your own capacity:** Move, add, and change bandwidth without calling in or waiting on hold.
- **Control the flow of traffic by application:**
Using Datadragon™, our bandwidth management platform, you can control in real-time which applications receive priority traffic and which do not.
- **Receive personalized technical support and training:** Whether you want to operate everything yourself, or if you prefer just enough insight to keep things running, we'll ensure your technical know-how is where you want and need it.

Isotropic's Service Offerings

Isotropic has tailored three VNO options to fit a range of satellite network requirements. They include:

VNO (Hardware option)

Get everything you need to build your own, private network without owning and operating teleport infrastructure. This service creates a separate network on top of the HUB network operator's (HNO) assets with a completely independent data path, upgrade autonomy, and the highest level of scalability. This package includes:

- Independent and fully owned network management system (NMS) (with optional active redundancy)
- Independent and fully owned protocol processor (with optional active redundancy)
- HUB line cards (ULC-T and ULC-R)
- Software license for one VNO
- Ability to quickly scale into larger networks by adding channel and managed service provider licenses, additional hub line cards, and protocol processors.

Develop niche opportunities worldwide with a high degree scalability and autonomy, an independent software upgrade path, and state-of-the-art network management tools and security.

VNO SW (Software option)

With the VNO software-only option, small- and medium-sized VNOs can deploy a logically separate network on top of an HNO's assets. In other words, you can run on the same hardware infrastructure (wholly owned by the HNO) with a logically independent data path. With this option, you receive a single software license for one VNO on a single NMS.

As your network experiences greater demand, you can easily migrate to a VNO (Hardware option) plan with a simple hardware upgrade. With the VNO SW option, you can develop niche opportunities regionally with interim scalability and autonomy, and state-of-the-art network management tools and security.

Customer Network Observer (CNO)

Our CNO option is a monitor-only solution for those customers that would like to see their satellite network while relying on Isotropic to directly configure and manage their remote sites. If you'd like to see cost savings without worrying about the details, this might be the best option for you.

As a CNO with Isotropic, you can monitor your specific set of remotes/clients, including real-time utilization statics and remote site status. Our 24/7 network operations center (NOC) is available to fully support your needs, including network configuration, commissioning, and troubleshooting. If you decide to take greater control of your network, we offer an easy migration path to a full VNO model.



Isotropic's VNO Package Details

- Network design services
- Use of Isotropic's teleport facilities and satellite antennas
- Seven (7) 6.1 m, one (1) 9.0 m, and one (1) 9.5 m Ku-band antennas
- Choice of multiple satellite footprints
- UPS backup
- Backup power generators
- Quad redundant gigabit internet backbone (with full diverse routing)
- Uplink power management
- Access to remote spectrum analyzer for all feeds, both polarities
- 24/7/365 Tier 2 service (NOC to NOC) from our world-class NOC

Monthly Service Fees

- Teleport services fee (Per Mbps)
- Space segment (Per Mbps)
- Backbone fee (Per Mbps)
- Co-location fee (Per RU for Reseller owned hardware)
- HUB slot rental (Per slot or slot group)
- HUB line card rental (VNO license only)
- HUB NMS/PP rental (VNO license only)

"The deployment of Datadragon has transformed our operations. Datadragon has enabled Squire Tech to become a more profitable business, to operate a more efficient network and to ensure that our customers get much more out of the network that they have purchased."

– Michael Zalle, Vice President of Sales and Marketing at VNO Squire Tech Solutions



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