



Case Summary

Customer

- Neptuno

Industry

- Telecommunications

Region

- Puerto Rico and the U.S. Virgin Islands

Challenge

- High-speed, weather-resilient wireless connectivity at equal to fiber reliability

Solution

- WiBAS™ G5 Smart (Base Station)
- WiBAS™ G5 GigaConnect+ (Terminal Station)
- uni|MS™ (Network Lifecycle Management & Automation)

Enabling Always-On Broadband Connectivity in Puerto Rico: How Carrier-Grade FWA Provides an Outstanding Broadband Experience

Neptuno, Puerto Rico's leading internet service provider, selected Intracom Telecom's WiBAS™ G5 Fixed Wireless Access (FWA) platform to expand the delivery of reliable, Gigabit-class broadband services across challenging environments. Following extensive field testing, WiBAS™ G5 demonstrated superior capacity, coverage, and service reliability compared to alternative solutions, enabling Neptuno to provide a fiber-like customer experience while maximizing the value of its licensed 28 GHz spectrum assets.

The Customer

Neptuno is a leading Puerto Rico-based telecommunications and IT solutions provider, specializing in wireless and wireline (fiber) connectivity. The company delivers high-speed broadband, cloud, cybersecurity, and data center services to residential customers and enterprises. With over two decades of telecom experience, Neptuno covers all municipalities in Puerto Rico and has a strong focus on business continuity and reliability. Within a few years of its founding, it has become the largest wireless internet provider in Puerto Rico and has expanded its service offering across other islands (including Vieques, Culebra, USVI).

The Challenge

Puerto Rico presents unique connectivity challenges. Frequent hurricanes, mountainous terrain, and seismic activity can significantly impact traditional wireline infrastructure, resulting in costly repairs and service disruptions. To address these challenges, Neptuno sought to use its L2 band at 28 GHz (425 MHz of wireless licensed spectrum) to offer Gigabit service. In 2025, Neptuno enriched its network with WiBAS™ G5 Smart Base Stations and WiBAS™ G5 GigaConnect+ Terminal Stations to deliver up to 2000 Mbps download services to homes and businesses. This was a clear decision after extensively testing WiBAS™ G5 radio equipment in the field, under challenging environmental conditions. More specifically, Neptuno tested 5G NR-based solutions in addition to WiBAS™ and found that WiBAS™ outperformed all other offerings as it delivered higher capacity, longer range and more reliable service with practically no service interruptions up to 2 miles.

“Intracom Telecom’s winning FWA solution allowed us to leverage the 28 GHz spectrum in the best possible manner. We now deliver consistent, high-quality service, elevate the customer experience and scale effortlessly to meet rising data demands.”

Melyssa E. Andrés
Product Development Director, Neptuno

The Solution

WiBAS™ G5 is a purpose-built, millimeter-wave FWA (Fixed Wireless Access) system with superb RF performance optimized for fixed services. It offers fiber-class multi-gigabit capacity and QoS, and is exceptionally resilient to rainy environments.

WiBAS™ G5 accommodates coreless technology based on flat Layer-2 access principles consistent with the architectures used by Internet Service Providers. Its design is simpler and less energy demanding than solutions that have to support the full mobility stack within the core.

WiBAS™ G5 uses Multi-User MIMO operation, with active antennas and beamforming / beam steering capabilities, for higher real-world speeds during peak hours and less “slowdown” when many users are active. This feature fundamentally optimizes efficiency, which is exactly what dense wireless access networks need.

The key characteristics of the WiBAS™ G5 system, comprising Smart Base Stations and GigaConnect+ Terminal Stations, include:

- **Market-leading performance:** 5.6 Gbps aggregate sector capacity at FR2 bands (mmWave).
- **Exceptional spectrum efficiency:** 28 bits/Hz/s in one sector, or 56 bits/Hz/s per typical 4-sector base station. Up to 2.4 Gbps download speed per end user.
- **Light weight & compact terminals:** easy installation in about 20 minutes.
- **Long-range of multi-gigabit services:** practical alternative to fiber deployments

In addition, WiBAS™ G5 is fully synchronized with the 3GPP timing profile, minimizing interference issues with 5G NR networks that can be deployed in the neighboring L1 band at 28 GHz.

Neptuno has also deployed Intracom Telecom’s uni|MS™ Network Lifecycle Management and Automation platform as part of the FWA solution. uni|MS™ offers advanced functionality for all network lifecycle phases: planning, rollout, optimization and maintenance. The uni|MS™ Radio Planner software is used to optimize the network design and support the automatic Service Qualification process. Zero-touch provisioning is also offered with the uni|MS™ SON Gateway plugin, supporting massive rollout, realizing error-free Terminal Station network entry and optimizing costs through the minimization of site visits and NOC engagement.

About Intracom Telecom

Intracom Telecom is a global technology systems and solutions provider operating for over 45 years in the market. The company is the benchmark in fixed wireless access, and it successfully innovates in the 5G/4G wireless RAN transport and small-cell SON backhaul international arena. Intracom Telecom offers a comprehensive revenue generating software solutions portfolio and a complete range of ICT services, focusing on IoT, SDN/NFV, Big Data analytics & data-driven intelligence, and Smart City solutions. Furthermore, the company is developing security integrated systems for critical infrastructure protection and border surveillance, having extensive knowhow and a proven track record in this industry. Moreover, it addresses the Energy & Utilities industry, emphasizing on smart metering and end-to-end IT solutions. Intracom Telecom serves telecom operators, public authorities and large public and private enterprises. The Group maintains its own R&D and production facilities and operates subsidiaries worldwide.