

CASE STUDY

REWRITING THE RULES OF OFFSHORE CONNECTIVITY

World's Longest Over-Water Wireless Link

OIL & GAS

LATIN AMERICA

Brava Energia and Ceragon have set a global record with a 126-mile offshore connection in Brazil

Brava Energia, one of Brazil's leading private energy producers, faced the daunting task of connecting offshore production assets more than **120 miles** from the coast. Fiber deployment was unfeasible, while satellite alternatives — both geostationary and newer LEO constellations — failed to meet the company's needs for latency, reliability, and guaranteed bandwidth. To solve this challenge, Brava turned to Ceragon, ultimately setting a world record with a **126-mile (~202 km)** offshore wireless link.

> "Replacing unreliable satellite communication with a secure, **high-capacity solution** has provided us with the stability and performance required to modernize our operations and plan for the future. With **99.99% availability** and guaranteed bandwidth, we can confidently grow our digital initiatives, trusting that our network can support innovation, from IoT to private LTE. Ceragon has proven to be a true strategic partner who seamlessly aligns their technology with our vision."
>
> Henrique Kronemberger, IT & Cybersecurity Manager

THE CHALLENGES

Vast Distance | Uptime Demands | Harsh Offshore Environment | Limited Alternatives | Real-Time Latency

- **Extreme Distance:** Reliable connectivity was needed across 126 miles (~202 km) of open sea far beyond typical offshore wireless deployments.
- **Limited Alternatives:** Fiber deployment was infeasible, while both traditional satellites and newer LEO constellations could not provide consistent low-latency performance.
- **High Availability Needs:** Offshore oil and gas operations demanded >99.99% uptime for mission-critical communication and monitoring.
- **Low Latency Requirements:** Real-time data transfer, video, and voice services needed stable, deterministic low latency.
- **Harsh Offshore Conditions:** Fierce winds, corrosive sea air, and constant saltwater exposure demanded ruggedized, stabilized equipment.

THE SOLUTION

Record-Breaking Reach | Carrier-Class Reliability | Ruggedized Design | Seamless Integration |Guaranteed Bandwidth

Ceragon deployed a high-capacity microwave system with advanced stabilization designed specifically for offshore environments. The solution was built on Ceragon's **IP-20N** platform with **RFU-D HP** radios in **6 GHz 4+0** configuration (PL180, Generic Platform), paired with a **1.2 m** antenna at **FPSO P63** and dual **2.4 m** antennas at Caledonia.

- **Record-Breaking Offshore Reach:** Achieved a secure, reliable 126-mile (~202 km) wireless link the world's longest of its kind
- **Licensed Spectrum Reliability:** Guaranteed dedicated bandwidth and QoS, outperforming satellite alternatives.
- **Redundancy & Failover:** Carrier-class reliability with built-in redundancy for uninterrupted connectivity.
- **Ruggedized Design:** Purpose-built to resist corrosion, humidity, and high winds over time.
- **Seamless Integration:** Supported Brava's existing infrastructure and provided scalability for future expansion into LTE and IoT applications.

KEY ADVANTAGES

- **Proven Long-Distance Capability:** Demonstrated unmatched ability to deliver reliable connectivity at extreme ranges.
- **Better than Satellite:** Deterministic low latency and dedicated bandwidth where satellite solutions failed.
- **Energy Sector Expertise:** Strong track record in offshore oil & gas projects worldwide.
- **Trusted Partnership:** Long-term relationship with Brava built on proven results.
- **Future-Ready:** Positioned to extend into managed services, private LTE, and IoT projects.
- **Field-Proven Equipment:** P-20N and RFU-D HP 6 GHz radios ensured resilient performance across the 126-mile link.
- **Local SLA & Support:** On-the-ground experts ensure uptime and advanced technical care.

THE RESULT

Ceragon ensured carrier-grade performance and stability across the world's longest offshore wireless link, by leveraging the **IP-20N and RFU-D HP 6 GHz** platform.

The project delivered transformational outcomes for Brava Energia:

- Established the world's longest offshore wireless link **(126 miles)**.
- Enabled secure, reliable, real-time communications between offshore platforms and onshore control centers.
- Replaced underperforming satellite services with guaranteed bandwidth and ultra-low latency.
- Strengthened operational safety through dependable monitoring and data transfer.
- Built a foundation for future LTE and IoT deployments across Brava's onshore and offshore assets.
- Increased network capacity: currently carrying **250 Mbps**, with proven test reaching **500 Mbps.**
- Ensured reliability: **99.99% availability.**

LOOKING AHEAD

Brava Energia now has a record-breaking offshore network backbone that proves what's possible when innovation meets execution. Building on this success, Ceragon and Brava are currently exploring new opportunities, from managed services to private LTE coverage for onshore energy operations.

Together, Ceragon and Brava are redefining what connectivity means in Brazil's most demanding energy environments.

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