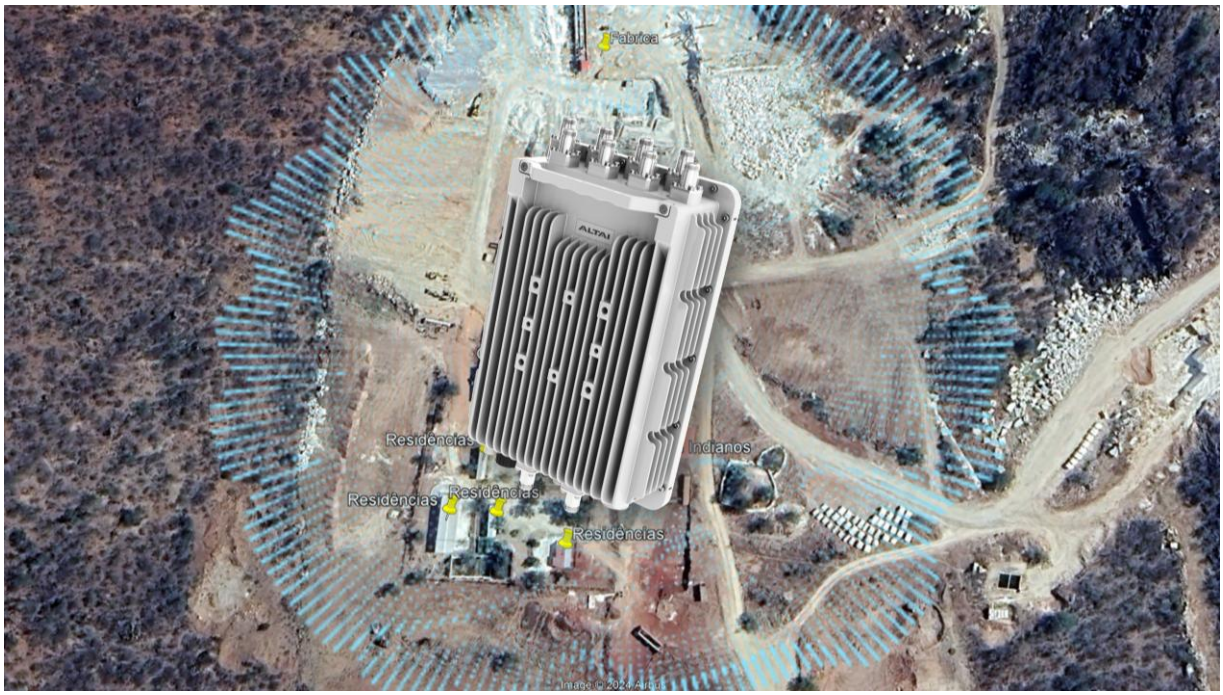

"This Rokafric Long Range Wi-Fi deploy is very important to us because it is the missing piece to manage wireless connectivity all over the construction site with simplicity."

Background

Marlin Natural Stones, founded in 2009, is a natural stone exploration and transformation company. Despite its youth, the company boasts strong capabilities thanks to its team of qualified technicians with extensive industry experience, ensuring high-quality products for partners and customers worldwide.

One of its quarries, RokAfric, opened in 2022 and spans 200 hectares in Caraculo, Angola. With a production capacity of 400 cubic meters per month, RokAfric is equipped with various machines, including hydraulic excavators, stone crushers, bench saws, wire rope machines, and crawler drilling machines. These machines are managed and monitored using equipment management devices from a third-party provider, making stable and reliable wireless connectivity essential for data transmission and maintaining high production efficiency.

To address this need, RokAfric sought a connectivity solution to provide extensive

Customer:
Marlin Natural Stones
Sinfic

Deployment Location:
Caraculo, Angola

Application:
Multi-SSIDs configuration for private Wi-Fi network and connectivity with third party equipment management system

Products:
Altai A8n (ac) Super WiFi Base Station

Solution:
- Super Dual-Band Coverage
- Hardened for Harsh Outdoor Conditions
- High-capacity environments

Benefits:
- Enhanced Connectivity
- Wi-Fi for IoT and Mobile Devices
- Easy management
- Durability and Reliability

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coverage across the quarry. Local partner Sinfic proposed deploying the Altai A8n(ac) Super WiFi Base Station, a flagship Altai access point designed to enhance connectivity in challenging environments. Sinfic conducted a proof of concept (PoC) to demonstrate the robust capabilities of the A8n(ac).

RokAfric covered an area of 200 hectares

Challenges

The Rokafric quarry is facing several significant connectivity issues that hinder its operations. The vast and uneven terrain made it challenging to maintain consistent wireless coverage, resulting in many areas lacking reliable internet access. Workers on-site required dependable Wi-Fi for communication and coordination, while the management team needed a separate, secure network to support fleet and equipment tracking systems. Additionally, the existing machinery and truck monitoring systems lacked integration, resulting in delays and inefficiencies in data reporting and performance analysis.

Solution

To address these challenges, Sinfic conducted a PoC by deploying Altai A8n(ac) Super WiFi solution in the quarry to showcase the robust performance of A8n(ac). This advanced access point with Altai's smart antenna technology was designed to provide long-range, high-performance wireless connectivity in rugged environments. A dual SSID configuration was implemented — one network dedicated to worker access and

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another exclusively for third-party company Quatenus' equipment management system, which is used in fleet and equipment management. This setup ensured that both human and machine operations could function smoothly without interference.

The A8n(ac) units delivered robust coverage throughout the quarry, enabling reliable internet access even in previously unreachable zones. With Quatenus integrated into the network, machinery and trucks began transmitting real-time performance data to the cloud. This enabled immediate monitoring and more informed decision-making, streamlining operations and enhancing overall efficiency.

Results

The deployment of Altai's Super WiFi solution brought about a significant transformation at the Rokafric quarry. Workers now enjoy consistent connectivity across the site, which has greatly enhanced communication and productivity. The seamless integration of Quatenus with the Wi-Fi infrastructure has optimized fleet and equipment management, enabling real-time updates and more effective oversight.

Sinfic emphasized the strategic importance of the deployment:

"This Rokafric Long Range Wi-Fi deployment is very important to us and Quatenus as they target construction sites to sell this Quatenus service. The missing piece was to manage wireless connectivity all over the construction site with simplicity."

Heavy machine equipped Quatenus' equipment management system at Rokafric quarry
Image Source: Marlin Natural Stones

This successful pilot project not only showcases the capabilities of Altai's Super WiFi technology but also sets a precedent for future deployments in Portuguese-speaking regions. It serves as a model for how smart connectivity solutions can overcome operational challenges in remote and complex environments, paving the way for broader adoption across the construction and mining industries.

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