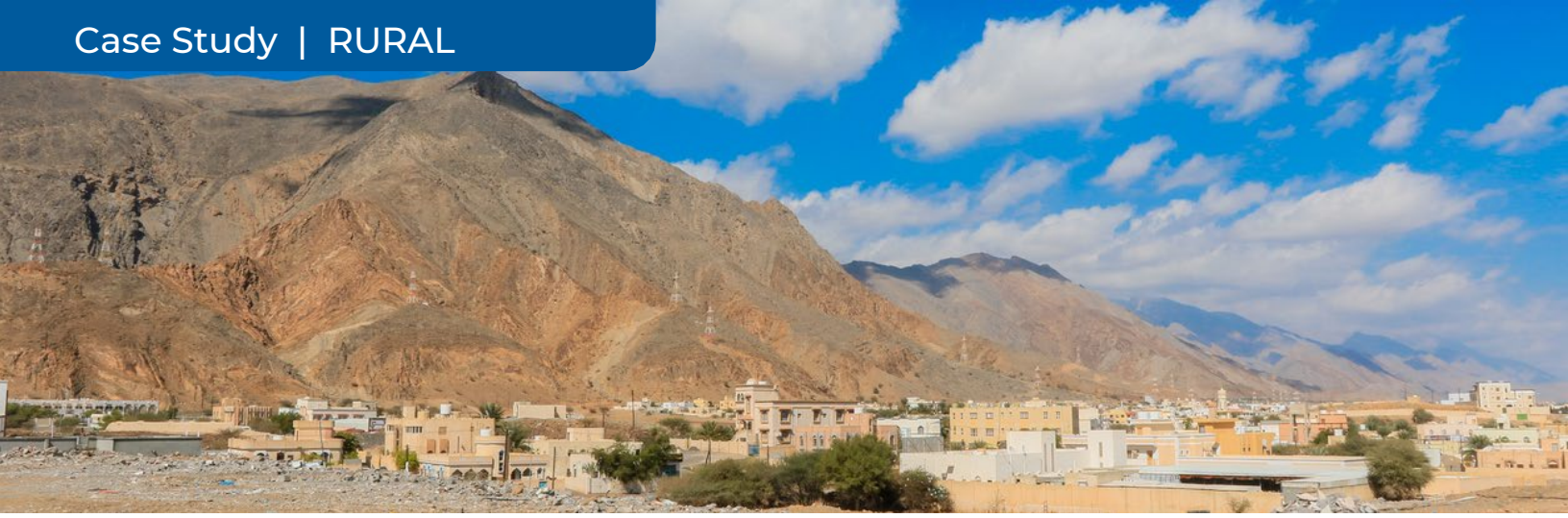
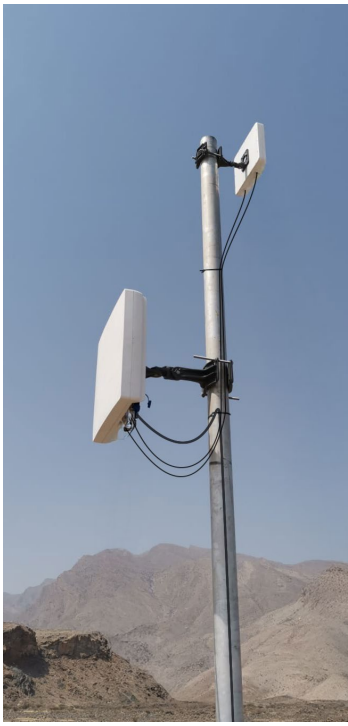


Omani Community Gains High-Speed 5G Coverage via Outdoor-to-Outdoor Lighthouse™ Deployment

The Challenge

In rural Oman, many residential and public areas remain underserved by reliable cellular coverage. A community located over two kilometers away from the nearest macro tower struggled with degraded LTE throughput, particularly in open-air and fringe locations. Despite proximity to the macro network, topographical obstructions and signal fading left users with subpar connectivity, experiencing LTE speeds as low as **33 Mbps down / 13 Mbps up** at 200 meters distance.



The Solution

Arigain designed and deployed a **high-gain Outdoor-to-Outdoor Smart Network Repeater** utilizing the Lighthouse™ solution. The system captured macro signals from a **base station located 2,340 meters away**, rebroadcasting the signals across the underserved zone using direction antennas..

Key deployment elements included

- Pole-mounted directional antenna aligned with the macro gNB
- Passive coverage antenna oriented toward the residential zone
- Integration of the Lighthouse™ repeater to drive high 5G throughput

The entire solution was **installed and tested within 4 hours**.

Challenge

Rural community lacked reliable cellular coverage due to topographical obstructions

Solution

High-gain, outdoor-to-outdoor repeater solution utilizing the Lighthouse solution was deployed

Installation

Installation completed within 4 hours using outdoor gNB alignment, directional 5G antenna, and end-user signal zone mapping

Results

Significantly improved LTE speeds, 5G availability across all trial zones, 5 – 10x throughput gains with zero service Interruption and no fiber needed

For more Information:
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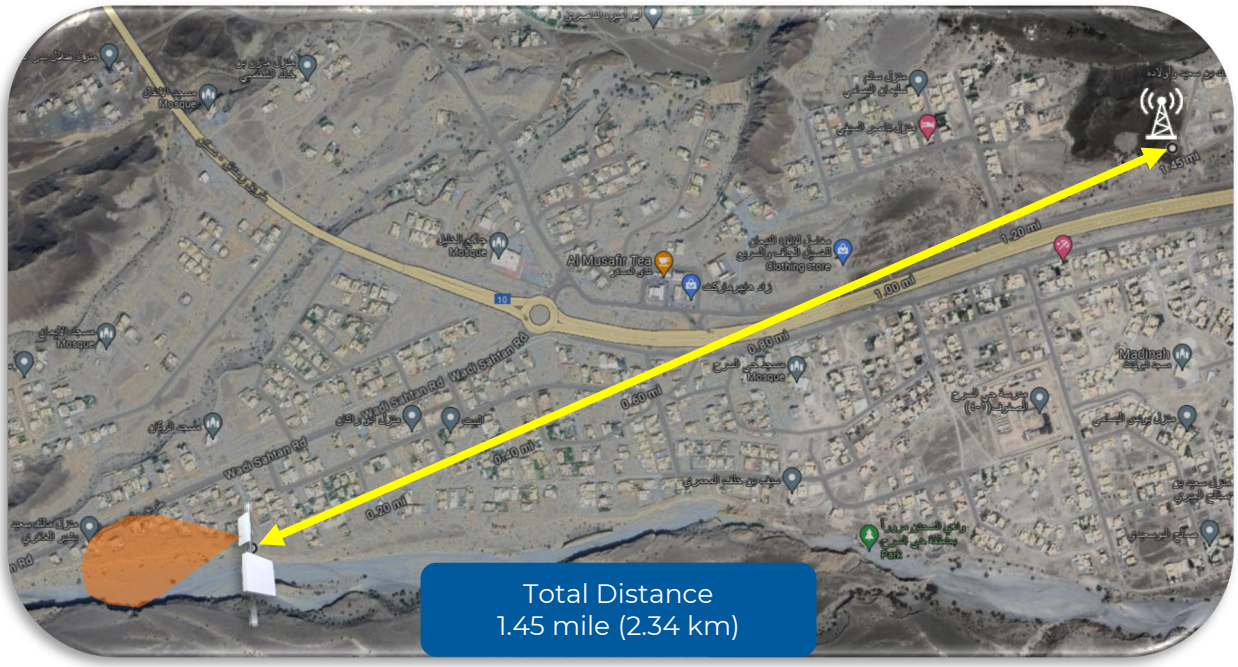
Airgain

Installation Approach

- **Outdoor gNB Alignment** with precision orientation (2340m link)
- **Directional 5G Antenna** placed to maximize line-of-sight propagation
- **End-user signal zone mapping** for coverage optimization



The Results

- Speed **improved from 33/13 Mbps to 412/49 Mbps**
- 5G availability across all trial zones, with performance reaching up to **449 Mbps down**
- Demonstrated **5X – 10X throughput gains** across a 200m test strip
- Zero disruption to existing infrastructure and no fiber needed