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CASE STUDY

How Red Sea Global Redefines Luxury Ecotourism with Connectivity and Smart Technologies
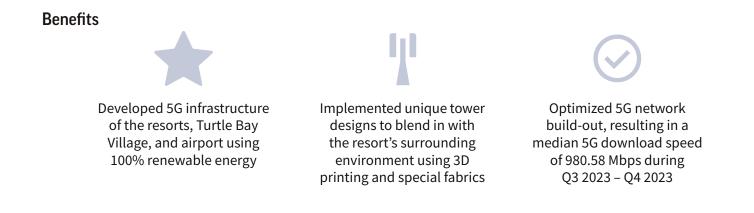
The future of tourism and hospitality leverages connectivity to provide a seamless guest experience from the moment you reach your destination. In alignment with the Kingdom of Saudi Arabia's Vision 2030 initiatives, Red Sea Global (RSG) is reshaping international luxury tourism by combining connected technology with an unwavering dedication to sustainability and conservation. Red Sea Global, a developer wholly owned by the Saudi Public Investment Fund, has opened two resorts so far, served by a dedicated international airport on the west coast of Saudi Arabia. Recognizing that a seamless vacation experience requires connectivity at every step, RSG set out to build premier resorts with high-performing networks and smart technologies. RSG took on this challenge while meeting rigorous global environmental standards – remaining carbon-neutral, using 100% renewable energy, and ensuring 30% net positive conservation benefits by 2040 by planting 50 million mangroves and 30 million trees.

Red Sea Global

"We are proud to have successfully redefined luxury ecotourism by combining connectivity and smart technologies with our commitment to sustainability and conservation. Through the strong Gigabit 5G network at our international airport and premier resorts, we are well positioned to deliver a seamless and memorable guest experience. Most importantly, the fact that The Red Sea destination enjoys speeds exceeding the fastest city in the world is proof that being sustainable is not a hindrance to performance in any way."

— Dr. Ahmed Ali Alsohaily, Group Head of Technology at Red Sea Global

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Benefits

Developed 5G infrastructure of the resorts, Turtle Bay Village, and airport using 100% renewable energy

Implemented unique tower designs to blend in with the resort's surrounding environment using 3D printing and special fabrics

Optimized 5G network build-out, resulting in a median 5G download speed of 980.58 Mbps during Q3 2023 – Q4 2023

Situation

Red Sea Global has opened its first two resorts at The Red Sea destination: The Six Senses Southern Dunes resort and the St. Regis Red Sea Resort at Ummahat Island, which will be joined soon by Nujuma, a Ritz-Carlton Reserve. These resorts are reachable using The Red Sea International (RSI) airport and will be joined over the next 18 months by another 21 resorts across The Red Sea and AMAALA destinations.

In order to provide a seamless guest experience at their resorts and airport, Red Sea Global needed to guarantee high-performing connectivity while being mindful of sustainability and environmental preservation. The 5G network build-out had to provide comprehensive coverage and fast speeds across the diverse terrain that includes beaches, dormant volcanoes, mountains, and deserts. RSG aimed to integrate robust 5G infrastructure to enable several guest experiences. This included vacation essentials such as media streaming and multimedia sharing on social media platforms. Further, RSG wanted to enable luxury amenities by leveraging smart technologies and harnessing Internet of Things (IoT) capabilities. Managing this 5G build-out while upholding rigorous sustainability standards required unique network deployment strategies and consistent monitoring.

Solution

Red Sea Global's goal was to become a premier destination for luxury ecotourism. This brought strategic challenges as RSG wanted to build the best-performing networks they could with the least infrastructure necessary in order to blend in with the natural environment. At all locations, RSG monitored and optimized the build-out with Ookla's network intelligence solutions, Speedtest Intelligence® and Cell Analytics®.

The priority was to develop the resorts and airports while preserving the rich surrounding environment and being mindful of resource consumption. RSG implemented solar-powered 5G stations, cooperating with operators to ensure towers were shared and configurations were optimized.

When selecting cell tower locations, RSG placed as few antennas as possible and compensated by leveraging large bandwidth (in excess of 300 MHz/operator) and 5G Carrier Aggregation (common combinations include EN-DC_1A-3C-28A_n40-n78 and EN-DC_1A-3A-20A_n41-n78). Tower designs were carefully selected to blend in with the surrounding environment. At the Southern Dunes, rooftop antennas were constructed on hills and covered by 3D printed camouflaging to preserve the guests' views.
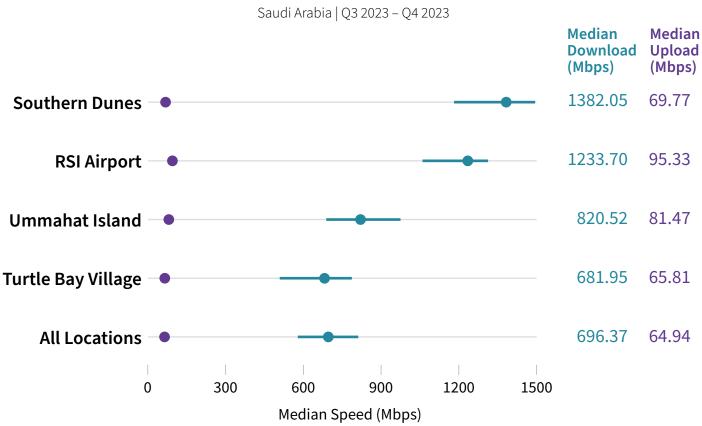
At the Turtle Bay Village hosting RSG employees and RSI airport, minimalistic towers were leveraged to blend in with the surrounding buildings. Ummahat Island, hosting the St. Regis and Ritz-Carlton resorts, used special fabrics to blend in with the resort designs.

The graph below highlights median download and upload speeds across The Red Sea destination.
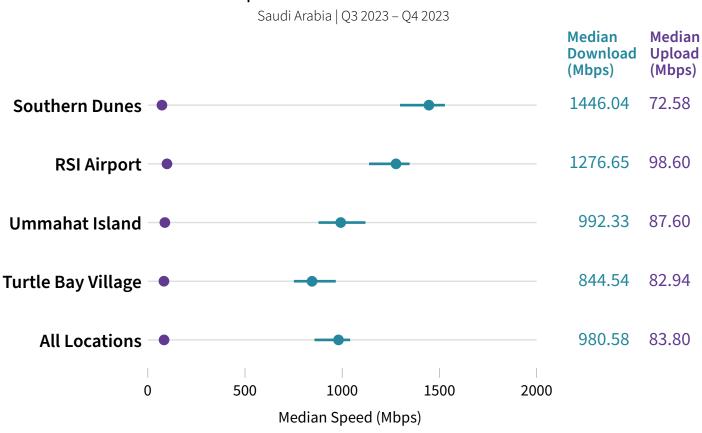
Median Speeds Across The Red Sea Destination
Saudi Arabia | Q3 2023 – Q4 2023

|	Median Download (Mbps)	Median Upload (Mbps)
Southern Dunes	1382.05	69.77
RSI Airport	1233.70	95.33
Ummahat Island	820.52	81.47
Turtle Bay Village	681.95	65.81
All Locations	696.37	64.94

Median Speed (Mbps)

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In addition to keeping guests connected, 5G networks have enabled RSG to enhance the guest experience. One example was RSG's smart luggage system: seamlessly processing flight details, executing luggage scans, and taking care of guests' luggage on arrival and departure, eliminating the common stress of carrying belongings throughout the travel journey.

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The graph below highlights median 5G download and upload speeds across The Red Sea destination.
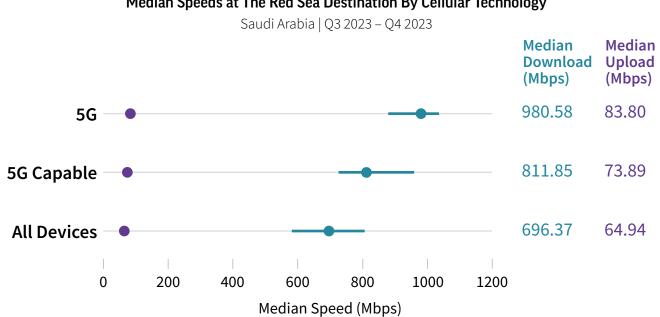
5G Speeds Across The Red Sea Destination
Saudi Arabia | Q3 2023 – Q4 2023

|	Median Download (Mbps)	Median Upload (Mbps)
Southern Dunes	1446.04	72.58
RSI Airport	1276.65	98.60
Ummahat Island	992.33	87.60
Turtle Bay Village	844.54	82.94
All Locations	980.58	83.80

Median Speed (Mbps)

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Outcome

Red Sea Global aims to become a world-leading destination for luxury ecotourism through a focus on sustainability, innovative technology, and best-in-class connectivity. The resorts and airport are powered by a high-performing Gigabit 5G network. Recognizing the importance of strong connectivity for a seamless vacation experience, RSG has enabled new guest experiences that leverage smart technology and 5G coverage. From Q3 2023 – Q4 2023, Speedtest results from across The Red Sea destination have shown an impressive median download speed of 696.37 Mbps. These speeds surpass the top ranked Median City Speed worldwide on the Speedtest Global Index™ by over 86%, based on December 2023 results. The graph below highlights the fast speeds experienced by devices connected to a 5G network, 5G-capable devices connected to any network, and all devices connected to any network across The Red Sea destination.

Median Speeds at The Red Sea Destination By Cellular Technology
Saudi Arabia | Q3 2023 – Q4 2023

	Median Download (Mbps)	Median Upload (Mbps)
5G	980.58	83.80
5G Capable	811.85	73.89
All Devices	696.37	64.94

Median Speed (Mbps)

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As a result of RSG's commitment to sustainability, they have been awarded the 2023 Global Telecoms Award and Telecom Review's 2023 Excellence Award for creating the world's first zero-carbon 5G Network. Red Sea Global will continue to redefine what luxury ecotourism looks like as they continue to monitor their networks and development of dozens of hotels over the next few years.

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