



# Mobile Coverage to Australia's Remote Regions

Integrating Small Cell Technology with High-Speed Cellular Backhaul over Satellite

CASE STUDY

## Client

Optus Satellite

# OPTUS

## Executive Summary

### The Challenge

Extend Optus' mobile network to remote regions with minimum deployment time and costs

### The Solution

- CellEdge Small Cell Over Satellite
  - CellEdge SDR for 3G/LTE networks
  - Cellular backhaul over satellite

### Benefits of Gilat

- Integrated, Small Cell solution optimized for satellite backhaul
- Excellent user experience
- Efficient provision of broadband services
- Fast and cost effective cellular coverage

Using Gilat's Small Cell Over Satellite solution, Optus is now providing mobile coverage for local residents and travelers in numerous previously unserved locations in South Australia and the Northern Territory.

### The Challenge: Making Mobile Black Spots a Thing of the Past

Optus, Australia's second largest mobile operator, is committed to bringing mobile connectivity to its customers in remote and underserved regions. In conjunction with the Australian government's Mobile Black Spot program, Optus has invested in a significant infrastructure project designed to extend its mobile network to regions without any mobile coverage in South Australia and elsewhere across the country.

Given the geographical and topographical challenges of extending coverage to these outlying areas, Optus sought innovative technologies that would allow it to cost-effectively connect these remote sites to its core cellular network.

### The Solution: Integrated Small Cell over Satellite

With these requirements in mind, Optus selected Gilat's CellEdge SDR (Software Defined Radio) Small Cell Over Satellite solution to extend 3G cellular coverage to regional and remote areas throughout Australia. Small cell technology provides a quick, inexpensive and easy-to-deploy alternative to traditional mobile base stations, while backhaul over satellite enables Optus to leverage its existing satellite network.



“Gilat’s Small-Cell-Over-Satellite solution enables us to provide mobile connectivity to unserved and underserved areas. It is an innovative and cost effective solution to address our requirements for delivering a high quality user experience, under challenging environmental conditions in regional Australia.”



Paul Sheridan,  
Vice President, Optus Satellite



CellEdge SDR

Initially deployed in 15 sites in South Australia, Optus plans dozens of similar deployments along some of the major highways of the Northern Territory and Western Australia. In addition to bringing mobile and broadband services to Optus subscribers in outback communities for the first time, this mobile connectivity also enables tourists and stranded motorists to make emergency calls from any mobile phone.

“Gilat’s Small-Cell-Over-Satellite solution enables us to provide mobile connectivity to unserved and underserved areas,” said Paul Sheridan, Vice President, Optus Satellite. “It is an innovative and cost effective solution to address our requirements for delivering a high quality user experience, under challenging environmental conditions in regional Australia.”

Gilat’s CellEdge SDR solution integrates an outdoor Small Cell for 3G networks with its field-proven and highly efficient satellite-based cellular backhaul solution, consisting of Gilat VSATs at each small cell site and the hub platform at Optus’ satellite network hub. Using patented data acceleration technology, Gilat’s solution provides an enhanced user experience with high throughput. At the same time, CellEdge allowed Optus to reduce CAPEX through low-cost equipment and low installation costs, while also lessening OPEX by reducing satellite bandwidth costs.

Featuring Software Defined Radio (SDR) capabilities, CellEdge can transmit two carriers from the same box simultaneously and enables seamless migration from 3G to 4G, when required.

### The Gilat Advantage



Optimized for satellite backhaul, Gilat’s CellEdge Small Cell Over Satellite backhaul solution delivers the same speed and quality as a terrestrial backhaul solution. CellEdge SDR uses the open standard luh interface, enabling satellite bandwidth optimization for high efficiency and data rates.

In addition, Gilat’s VSAT technology ensures a superior user experience for Optus customers due to the use of Gilat’s patented embedded acceleration techniques over GTP/TCP to overcome inherent satellite delay.

Gilat’s CellEdge solution has given Optus a highly efficient way to introduce mobile and broadband services in challenging and potentially expensive locations. The compact small cell enables quick and easy deployment on almost any existing structure, as opposed to building a large and costly mobile base station. Furthermore, Optus can use Gilat’s VSAT technology and its existing satellite network for backhaul rather than having to set up microwave or fiber connections.



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