

Case Study: Connecting Australia with Satellite Broadband

End-to-End Implementation of a Large-Scale Multi-Spot Beam Satellite Network



Executive Summary

The Challenge

Help the NBN project provide broadband coverage to all Australia's residents, regardless of location

The Solution

End-to-end deployment, national network operation and maintenance: 48,000 SkyEdge II VSATs and 22 network segments using three gateways, KU national and multi-spot beams

Benefits of Gilat

Gilat's turnkey solution includes:

- Ground station hub infrastructure
- NOC operation
- Responsibility for CPE installation and maintenance
- Full compliance with OH&S standards



Gilat delivers a turnkey consumer broadband solution via satellite to rural areas, as well as to line-of-sight (LoS) and topology-challenged locations.



Satellite-based connectivity is a critical element in NBN Co's commitment to offering broadband services across Australia, and Gilat's expertise in delivering large scale projects has been key to helping Optus meet this important milestone of connecting more than 10,000 sites.



Paul Sheridan
Vice President, Optus Satellite

The Challenge: Country-Wide Coverage

With a multi-year budget of over \$40 billion, the Australia government's National Broadband Network (NBN) is currently one of the largest infrastructure investment projects in the world. Their mandate is to provide broadband services to every Australian, regardless of where they live. Many technologies, including fiber, fixed wireless and satellite, have been employed to deliver high-speed Internet services to consumers and businesses across Australia and surrounding islands.

The satellite service has been especially designed for the 48,000 customers in rural and remote areas for whom satellite provides the best means of supplying a high-speed broadband network. This service also benefits users who have line-of-sight obstructions or topology constraints that prevent wireless access.

NBN Co's Interim Satellite Service needed to provide end users with broadband connections reaching speeds of 6Mbps for the downstream and 1Mbps for the upstream. It also had to be integrated with both Optus and IPSTAR satellites (using Ka/Ku-band multi-spot beams) that were already in orbital place.

The Solution: End-to-End Implementation of a Large-Scale Satellite Network

As NBN Co's prime satellite services and capacity contractor, Optus could choose any VSAT provider. It selected Gilat Satellite Networks based on a very satisfactory past experience with Gilat as a vendor. Gilat listened carefully to its client's needs and implemented a turnkey solution covering all aspects of setting up a satellite network with tens of thousands of VSATs, including VSAT network infrastructure, terminal installation and maintenance, and hub operations.

Gilat's broadband platform incorporates advanced satellite communication technology to maximize performance and optimize satellite resource utilization. Shepherding the process from beginning to end, Gilat deployed months ahead of schedule.

Working within the spot-beam architecture and established gateways, Gilat provided 48,000 VSATs and 22 network segments, managed by a common network operations center (NOC) in Melbourne. Each gateway is equipped with a SkyEdge II hub system that serves the VSATs located in the coverage area of the corresponding satellite beams.

The gateways are managed by a Gilat-established NOC in Melbourne, which offers visibility into the entire VSAT network and provides fault management, hub satellite bandwidth capacity monitoring, and network resource availability monitoring for network operators and technical support engineers.

As part of its end-to-end solution, Gilat has provided a variety of services for NBN, including:

- Full responsibility for end-to-end VSAT technology, installation, maintenance and support
- Active 24/7 network monitoring and network operation from the NOC
- Tier-3 and Tier-4 customer support
- Hub maintenance and operation in the gateway locations

The Gilat Advantage

Deploying Gilat's turnkey satellite network provides NBN Co with several benefits:

- Peace of Mind: Gilat handles all aspects of deploying a large-scale network, from technology to installation to maintenance. Within the NBN project, it received the highest customer satisfaction mark
- Fast deployment: The SkyEdge II broadband VSAT system was deployed ahead of schedule
- High network availability: NOC management ensures the network functions properly and SLA commitments are met
- Maximum performance and utilization of satellite resources: Efficient modulations (e.g., 32APSK) and multi-protocol acceleration enable increased data throughput



SkyEdge II: High-performance, cost-effective VSAT system



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