

CORIANT IS NOW PART OF INFINERA

Australia's National Network Uses Coriant Optical Platform

High-speed Broadband Network to Service 100% of the Country's Homes and Businesses

CHALLENGE

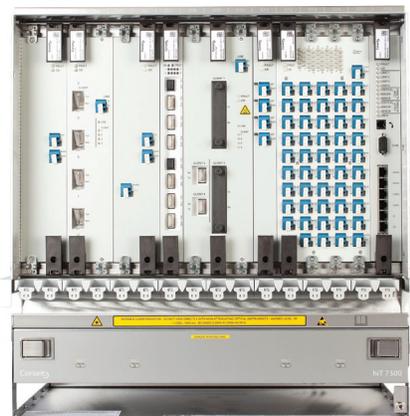
Australia's National Broadband Network (NBN) is one of the largest infrastructure projects in the country's history – building a brand new fiber-to-the-home and node, fixed wireless, HFC (Hybrid Fiber Coax) and satellite network that is set to make high-speed broadband available to 100% of Australian homes and businesses. In 2009, an Australian Government Business Enterprise, known as NBN Co, was established to design, build and operate the NBN, which will provide connectivity on a wholesale basis to commercial telecom service providers. The NBN will ultimately reach 12 million locations.

SOLUTION

An important element of the NBN is the Coriant® hiT 7300 Multi-Haul Transport Platform – an advanced optical transport platform optimized for flexible and efficient transport in long haul and ultra-long haul networks. By using the Coriant platform in its transport network between the access network and points of interconnect, known as the Transit Network, NBN Co is well positioned to expand capacity in the future.

The Transport Network is built on 60,000 kilometers of fiber configured in 107 fiber rings nationwide. Using Coriant's hiT 7300, NBN Co is able to transport as many as 96 DWDM channels, each operating at up to 100 Gbps, for a total capacity of 9.6 Tbps per fiber pair. The fiber rings are being interconnected in a fully meshed architecture and will collect traffic from several different types of access network technology – including fiber-to-the-home (FTTH), fiber-to-the-node (FTTN), hybrid fiber coax (HFC), wireless and satellite. The rings will transport the traffic to a Point of Interface (POI). The POI is where “access seekers” such as retail Internet Service Providers gain access to their customers.

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Customer



Location

Australia

Challenge

- Build a new high-speed broadband network to service 100% of Australian homes and businesses
- Ensure ability to accommodate future expansion

Solution

- Deploy industry-leading multi-haul transport solution
- Provide end-to-end project support
- Demonstrate new technology to maximize the use of the existing fiber optic infrastructure

Results

- Project is on-track for completion by mid-2015
- Deployed solutions that enable a fully-meshed architecture
- Demonstrated the ability to efficiently scale the network as end-user traffic demands increase

One of the rings planned for the NBN (under construction as of October 2014) will include 10,000 kilometers of fiber. Coriant also worked with NBN Co to install a 250 kilometer repeaterless submarine system between Victoria and Tasmania (the large island across the Bass Strait from mainland Australia). Just over half of the NBN's 107 fiber rings had been completed as of October 2014, with most of the remaining rings to be constructed by mid-2015.

CORIAN SERVICES

Coriant has supported the NBN Transport project end to end. Approximately 40 Coriant personnel work full time with NBN Co. This includes a 20-person in-house technical services team and 20 field-based technical experts. Services that Coriant provides NBN Co include:

- Design
- Type Testing
- Delivery
 - program management
 - equipment ordering
 - factory acceptance testing
 - delivery to the site
- Installation and commissioning services
 - on-site acceptance testing
- Technical support
- Software support such as upgrade and update testing
- Hardware support including advanced replacement and repair
- Standard and customized training

Coriant provides one of three levels of technical helpdesk support for NBN Co. The first and second points of contact are local NBN Co personnel. If those personnel are unable to address an issue, the issue is escalated to Coriant Global Support. Coriant has enough specialized technical expertise in Australia that such escalations are minimal.

DEMONSTRATING FUTURE CAPABILITIES

Coriant and NBN Co have worked together to explore new technologies that could continue to evolve the NBN into the future. In March 2014 the companies successfully completed one terabit per second (Tbps) super-channel transmission over a 1,066 kilometer fiber optic ring on the NBN in Southeast Queensland. Using commercial-grade Coriant hiT 7300 DWDM hardware, including innovative FlexiGrid technology, the trial demonstrated NBN Co's ability to efficiently scale its network as end-user traffic demands in Australia increase. A 36% increase in the capacity of the 1,066 kilometer fiber optic ring to 13 Tbps was demonstrated.

FlexiGrid technology is based on an adaptive channel grid with wavelengths dynamically selected based on the data rate. By increasing channel density, FlexiGrid technology enables NBN Co to maximize the use of the existing fiber optic infrastructure, while maintaining network flexibility, resiliency and performance.

SUMMARY

The Coriant hiT 7300 Multi-Haul Transport Platform is an important element of Australia's ambitious National Broadband Network operated by NBN Co. The product supports more than 100 fiber rings nationwide, enabling a single fiber to carry 9.6 Tbps comprised of up to 96 DWDM channels operating at speeds up to 100 Gbps per channel. Coriant's end-to-end support of the hiT 7300 deployment includes a range of services including design, delivery, installation and commissioning, and technical support.

ABOUT THE CORIAN[®] hiT 7300

Coriant's hiT 7300 Multi-Haul Transport Platform uses advanced digital signal processing and coherent technology – a sophisticated form of wavelength modulation and detection. Together these technologies enable the hiT 7300 to support data rates of 40 Gbps or 100 Gbps over a single wavelength over spans of 2,000 kilometers – without regeneration – delivering the same or better reach than is achievable with non-coherent 10 Gbps wavelengths.

The DWDM optical platform is managed by the Coriant[®] Transport Network Management System (TNMS), which has been integrated with NBN Co's operational management systems through a northbound interface. TNMS also exports data to NBN Co's operations, reporting and diagnostic systems.

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