

◉ Careers

## Opportunity knocks for workers in a growth industry

By ORYANA ANGEL

AS Australia's satellite industry expands, with the roll-out of the new National Broadband Network and the launch of the Optus 10 satellite mid-next year, so too does job creation in the sector.

The number of people directly involved in satellite communications services at Optus, one of the industry's major players, is now about 130—a number that is steadily increasing, according to the vice-president of Optus Satellite, Paul Sheridan.

"In the 1980s, we only had three satellites," Sheridan says. Today, the company has the largest fleet of domestic satellites in Australia and New Zealand, delivering the majority of the nation's satellite services, including subscription-TV, free-to-air TV, radio, internet, voice and data services. It also owns and operates five satellites—Optus B3, C1, D1, D2 and D3.

The majority of the Optus satellite workforce has an engineering focus, particularly in the electrical, mechanical, space and aeronautical fields.

"They are responsible for controlling and operating our fleet of satellites; also designing, implementing and operating our extensive network of ground infrastructure that communicates with the satellites and the network that connects our customers with the satellite," Sheridan says.

While engineers and similarly skilled professionals are a hot resource across many industries, Sheridan says being the only satellite operator in Australia puts Optus ahead in the war for talent.

"To work in this environment is a unique opportunity, so we tend to attract and keep those skills here in Australia," he says.

Optus also carries out in-house training and accreditation as the skill set is unique.

"We have some engineering graduates who recently joined the company that have gone from university to being involved in the design and manufacture of a brand new satellite—that's pretty exciting for those guys and girls," Sheridan says. The majority of jobs in the industry, however, are on a trade level.

Skybridge, Australia's largest satellite broadband deployment

service, responsible for providing the installation for NBN first-release satellite services, has doubled its workforce in the last nine months. The company now employs 100 people and works with more than 400 contractors around the country.

"We are the end point to make sure people connect to the satellite," says Skybridge CEO, Michael Abela. Jobs with the company include satellite dish, cabling and modem or set-top-box installation. Skybridge has installed more than 100,000 Australian homes, mostly in regional and remote areas, with satellite technology.

"We have technicians all over the country and we are constantly looking for them," Abela says. He adds that people with general trade experience should also consider joining the industry.

"We can provide them with appropriate training and, depending on their skills, they can be in the field in a matter of weeks," he says.

Mirroring what is happening in mining, Abela says there are some places where it is more difficult to attract staff because of the strength of the economy.

The growth is not only in satellite engineering; it's also in administration and support functions. In other words, it's not only people with engineering degrees who are needed.

"Our future is for continued strong growth and we are always on the lookout for good technicians and admin staff," Abela says.

Meanwhile, NBN's plans to launch two satellites in 2015 will boost jobs in the sector.

The project director for satellites at NBN Co, Matt Dawson, says the company will employ around 60 full-time satellite engineers and technicians to manage NBN Co's Long-Term Satellite Service. "Additionally, an estimated 20 to 30 contracted construction workers will be required to build each of the 10 satellite ground station facilities and there will be many involved in the supply logistics," he adds.

The Federal Government has already announced eight of the 10 satellite ground station sites: Roma in Queensland; Woomla and Bourke in New South Wales; Ceduna in South Australia; Geeveston in Tasmania; and Carnarvon, Geraldton and Kalgoorlie in Western Australia.

◉ Variety

# The sky's the limit

Satellite professionals **TONY COLUCCI** and **NICK LEAKE** give a rundown on the wide array of modern services provided by space technology

DID you watch Alicia Coutts swim her way to five Olympic medals in the 2012 London games, or see the Sydney Swans thrilling win over the Hawthorn Hawks in the Aussie Rules Grand Final last month?

Have you used your ATM card when filling up at a service station? Did you check out a weather report before making plans for a road trip? If so, satellites have played a part in your life.

We use and rely on satellites every day without realising it, and yet today's satellites offer opportunities we may never have dreamed of before. Imagine getting high-speed broadband internet or high-definition television in the most remote locations. Consider seeing a doctor without having to drive to a clinic. Think about having communications and data available to you wherever you go.

Different types of satellites provide us with different types of services, such as high-speed internet, mobile phone service, television broadcasting (both pay-TV and free-to-air), emergency and disaster response, digital radio broadcasting, global positioning data, distance education, weather monitoring and more.

Satellites are an integral part of a robust telecommunications network delivering a broad range of services to users when and where they want them. Many of these services come from geostationary satellites in orbit 36,000km above Earth. In this orbit, the satellites revolve around Earth once a day and thus appear motionless in the sky, which means the dish on your roof is always pointed at the satellite. From this vantage point, a satellite can provide services to anyone anywhere in a large area, such as the entire continent of Australia.

### Broadband Digital Communications

#### What it provides:

- High-speed, always-on internet
- Interactive television
- Digital multimedia content, including video and audio

**How it works:** Broadband satellites transmit signals to users. The satellite sends data to and from a dish at the user's home or office. The user's computer or TV receives this data through a set-top box. Satellite broadband service is high speed and always on; no phone line is required.

**What it means to you:** Satellite is the ideal way to provide broadband service for those who are difficult to reach otherwise, offering download speeds of 6 and 12 Mbps and more, and upload speeds of 1 Mbps and more. Over the past 10 years nearly 100,000 Australians have had their broadband service delivered via Optus and Iptstar satellites under various government subsidy schemes. Currently, NBN Co is rolling out their First Release Satellite Services via a managed service agreement with Optus, providing 6MB x 1MB services until their new satellites are launched in 2015. The National Broadband Network will provide enhanced service for 200,000 Australians in remote locations, with its two next-generation satellites.

### Fixed Satellite Service

#### What it provides:

- Media communication including video transport
  - Point-of-sale support, such as credit card transactions, commerce and inventory control
  - Corporate applications, such as private networks and video conferencing
  - Paging networks
  - Distance education and telemedicine
- How it works:** Satellites providing Fixed Satellite Service (FSS) transmit communications to and from ground stations at fixed locations. The ground stations then re-transmit the data where necessary. Most television content providers transmit programming to the networks using FSS (video transport). News gathering vehicles are also used in FSS to broadcast from events.
- What it means to you:** Fixed satellite service allows you to use your ATM card at the service station or grocery store. It provides television coverage; even if you don't have satellite television, your free-to-air channels or cable television likely includes programming that was sent through an FSS satellite to or from the studio and then re-broadcast. FSS also provides distance education and telemedicine. Video conferencing lets specialists connect with patients and other medical professionals to collaborate on diagnoses and treatment.



Just imagine: Satellite broadband service is high speed and always on; no phone line is required and it can reach the most remote locations

### Broadcast Satellite Service

#### What it provides:

- Direct-to-home television broadcasting, including High Definition (HD) TV
- How it works:** Broadcast Satellite Service (BSS) transmits satellite signals for direct reception by users, much like broadband satellites. A satellite service provider, such as Foxtel, compiles programming from various sources and sends that programming to a geostationary satellite. The satellite re-transmits it to the service area where it is received by a dish on the user's roof.
- What it means to you:** Broadcast Satellite Service allows people to get specialised programming and television service even if they are outside the areas covered by cable or terrestrial broadcasting.

### Mobile Satellite Service

#### What it provides:

- Radio broadcasting
  - Mobile phone service
  - Mobile data applications
  - Global Positioning Systems (GPS)
  - Emergency and disaster services
  - Maritime communications
- How it works:** Typically, it uses a constellation of two or more satellites that provide services to portable wireless devices, such as mobile phones, GPS devices and maritime equipment. The satellite constellation may be interconnected with land-based cellular networks or ground components that allow for interactive mobile-to-mobile and mobile-to-fixed voice, data and multimedia communications. With repeaters located in orbit, the interference of traditional fixed-ground terminals can be eliminated.
- What it means to you:** MSS provides people with services on the go, making communication available in remote locations or where traditional ground systems fail due to disaster. MSS can play a vital role in disaster relief efforts, establishing early communications on the ground to provide visibility and direct operations when ground communication systems have

“We use and rely on satellites every day without realising it, and yet today's satellites offer opportunities we may never have dreamed of before”

been damaged. MSS communications were critical to relief efforts in Japan after the 2011 tsunami and in Haiti after the 2010 earthquake. MSS includes radio broadcasting such as Sirius XM Satellite Radio in North America. Sirius XM delivers more than 140 digital audio and video channels to more than 20 million subscribers. Programming, which can be received in automobiles or at homes and businesses, includes a broad range of commercial-free music, premier sports events, comedy, news and talk and entertainment.

### Meteorology/Remote Sensing

#### What it provides:

- Weather forecasting
  - Environmental analysis
  - Imagery of the Earth
- How it works:** Remote-sensing tools collect atmospheric and environmental data about Earth, including electromagnetic radiation measurements, as well as visible, infrared and water-vapor images. The information is transmitted from the satellite to ground stations, where it is processed and delivered to organisations that analyse and evaluate the data.
- What it means to you:** Meteorological satellites help identify, predict and track weather systems and atmospheric conditions across the world, allowing early warning of major storm systems or other potentially catastrophic conditions.

### Military Use of Satellites

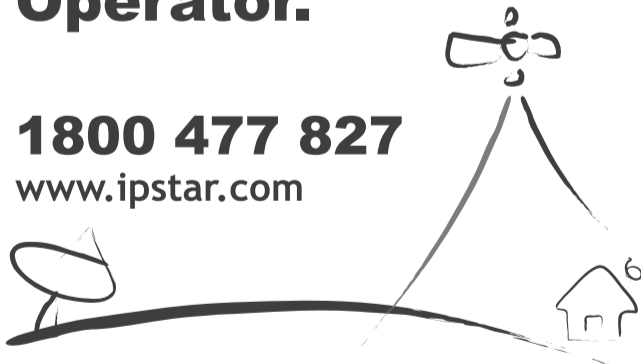
Governments use satellites to provide military communications, surveillance and reconnaissance. A satellite can be built and launched with the sole purpose of serving the military, or governments can lease or buy a portion of the satellites communications payload for their use.

Tony Colucci is vice president of business development for Space Systems Loral; Nick Leake is director of satellite marketing for Singtel Optus

**ipstar** \*  
Broadband Satellite

**Australia's Largest VSAT Network Operator.**

1800 477 827  
www.ipstar.com



## Satellites for Australia

SPACE SYSTEMS  
**LORAL**  
www.ssloral.com