

# Satellite Ground Station solutions

The sky is no longer the limit

**Global connectivity** 

**Power resiliency** 

Site selection, construction, and maintenance



# Your partner in connectivity



From diverse fibre to duct access, data centres to satellite ground stations, Telstra InfraCo gives you the scale, resilience, and performance to deliver more for your customers.

As a leading digital infrastructure provider in Australia, Telstra InfraCo provides a combination of certified engineering expertise, high-speed infrastructure, and sovereign, secure data centre capabilities. We also have established fixed network sites that are ready for satellite ground station construction, primed with reliable power and diverse dark and lit fibre connectivity that can carry your data to more locations throughout Australia.

It's why we're trusted to deliver and manage critical infrastructure — tailored to meet the unique needs of governments, financial services, multinational enterprises, global hyperscalers, and more.

With 250,000 km of terrestrial fibre, links to 400,000 km of subsea cable, seven data centres in Australia and partnerships with over a hundred third-party data centres globally, and 15,000+ telecommunication sites built, operated, and managed by Telstra InfraCo and Amplitel, we are well-suited to provide you with an end-to-end solution.



The likelihood is that your ideal satellite ground station site is either already owned by Telstra or very close to Telstra infrastructure. With over 50 years of experience operating satellite teleports in Australia, we bring deep capability to deliver the power and connectivity you need to bring your site to life. Colocation of your satellite infrastructure may be suitable at one of our 7,000+ fixed network sites or at a new strategic location.

### The infrastructure to build your business, no matter where you plan to take it

Connect to a global ecosystem of world-class infrastructure — from core data centres to fixed network sites to redundant intercity fibre. Predefined high-speed fibre routes and nbn™ points of interconnect (POIs) enable you to deploy services faster with a wide choice of high-speed connections to more places.



### 250,000 km

of terrestrial high-speed, diverse lit and dark fibre



Intercity fibre and Viasat projects investing up to \$1.6 billion, with construction well underway



Access to 15,000+ telecommunications sites, managed by Telstra InfraCo and Amplitel



Connections to

satellite ground stations and teleports



Australia's largest mobile network



Predefined fibre routes connecting **7 Australian data centres**, with links to 100+ global data centres and NBN POIs



Links to 400,000 km of subsea cable through 26 systems with 36 cable landing stations



2,000 international PoPs and connectivity in 200+ countries and territories



Managed cross connects and cloud integration with leading providers

# **Engineering Tomorrow**

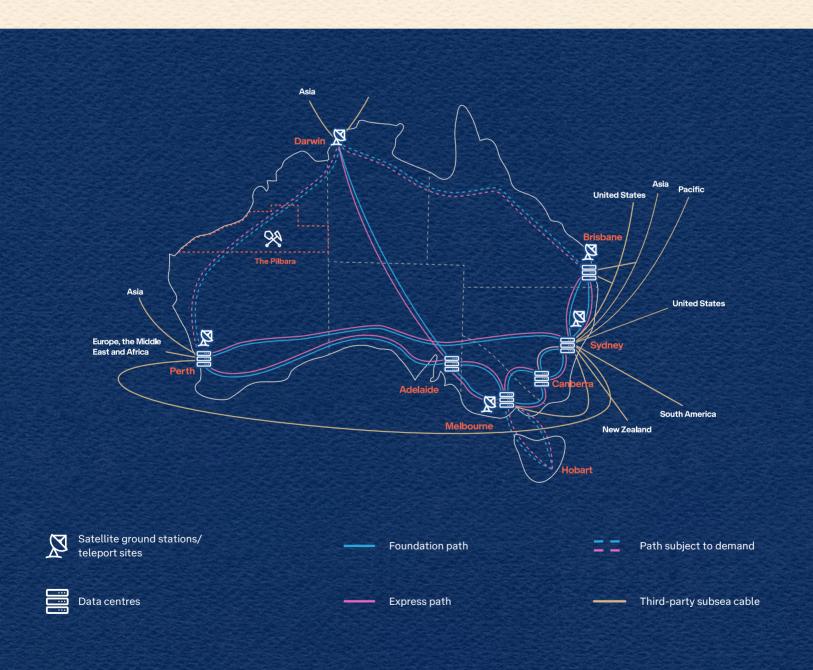


As one of Australia's leading network builders, we connect you to the world.

Australia's geography demands scalable solutions. Telstra InfraCo can support you in building ground stations that connect your end-users to high-speed internet.

We deliver a full design and construction wrap for projects involving single or multiple satellite dishes or arrays. Our solution includes site selection and acquisition as well as site design, power provision, project planning, and security — all with regulatory compliance in mind.

When combined with our high-speed fibre network and data centres, we enable you to expand your reach and expand connectivity across metro and regional communities.



# Grounded to support **Telstra** InfraCo your satellite sites



Expand your operations with colocation at our fixed network sites, a new strategic location, or within our teleports to host your satellite ground station.

Australia's unique geography and strategic location offer favourable conditions for various satellite orbits. Whatever your requirements, our experts are skilled to assist with everything you need to choose, design and build your satellite ground station infrastructure your way.



### Choose your preferred location

Existing sites: We offer a choice of colocation at one of our 7000+ fixed network sites, or at our existing teleports.

Greenfield sites: We can offer comprehensive support with site identification, acquisition, approvals, and construction for greenfield sites. Along with Amplitel, we bring ~150 new telecommunication sites to market each year and have strong expertise in managing property acquisition, engaging in stakeholder and community consultation with landowners, and managing permitting of sites.



### Plug into resilient power

We provide resilient access options for utilities to support critical infrastructure. Our reliable, sustainable, and efficient energy solutions are designed to meet a variety of needs, offering multiple backup options including simple, essential, complex, or off-grid site solutions. Our systems are tailored to provide support by leveraging advanced technologies to not only meet your current needs but also adapt to future demands. This provides a secure and dependable foundation for your critical infrastructure.



### Connect to a high-speed fibre backbone

Establish robust and reliable connectivity for your satellites across Australia by leveraging our intercity fibre network backbone. Choose from tailored bandwidth solutions, including lit (wavelength) or dark fibre options, to meet your specific throughput and latency requirements on our geographically redundant network.



Draw on Telstra InfraCo's expertise. We have deep experience in designing, building and maintaining our Oxford Falls and Gnangara teleports and managing customer sites at greenfield locations. Our knowledge of complex technical and regulatory requirements can support efficient project execution. Satellite ground stations are essentially telecommunications sites, an area where Telstra InfraCo has extensive experience.



## Navigate development

We handle critical aspects of construction, including securing development permits and approvals. We'll help secure capable contractors through our relationships with key construction partners. Our expertise in construction techniques, along with commitment to safety, environmental and industry best practices, helps reduce risk and deliver superior project outcomes for you.



# Rely on streamlined site solutions

Have confidence that your infrastructure is being monitored and maintained by experts. Enjoy site management and maintenance with our proactive management of stakeholder relationships, including utilities and government agencies.



### Rest assured with sovereign solutions

Our fixed network sites are 100% Australian-owned and operated, and part of the nation's critical infrastructure. We design and build satellite ground stations to meet your specific requirements, as an example: supporting compliance with ASIO security standards and the Protective Security Policy Framework (PSPF), as well as international standards such as US Trade Controls and US Federal Acquisition Regulations.



# Accelerate your Australian footprint

We're empowering international organisations with limited Australian presence to expand operations through colocation options. By enhancing process efficiency and reducing set-up risks and ongoing operational costs, we help you undertake a streamlined and cost-effective expansion into Australia.

# How we deliver results for you



With decades of engineering excellence, our teams bring a wealth of expertise and knowledge to the table, providing support so projects are executed reliably with high standards of safety, quality and efficiency.

# 1. Choose

# 2. Build

# 3. Run

# Supporting smooth and efficient site selection or acquisition

- In close consultation with you, we'll assess your requirements, be it location, construction, radio frequency, power, diverse connectivity and latency.
- We'll identify whether one of our existing teleports or 7,000+ fixed network sites meet your needs.
- If not, we'll work closely with you and use our local knowledge to find suitable locations and then undertake to acquire the right site with appropriate consultation and necessary approvals.
- We'll provide clear scope and cost forecasts.
- Whether existing or greenfield sites, we'll help enable access to the power and fibre networks you'll need for successful communications and power networks through greenfield site acquisition.

# Helping you achieve complex construction projects in a timely manner

- We'll work with you on modern, robust design for reliable infrastructure.
- To help expedite your site build –
  whether on a greenfield or
  existing fixed network site –
  we work closely with trusted
  suppliers following industry
  best practices.
- Our profile and local knowledge help us deliver smooth procurement processes for good quality construction materials.
- Throughout construction, we'll provide guidance and help with local regulation compliance, risk management, and environmental and sustainability considerations.
- We employ comprehensive safety management aligned with Australian Standards and OHS legislation.
- We'll keep you informed at every step of the process.

# Operating your ground station infrastructure at peak efficiency

- Our dedicated operations team will help you with reliable site management to maximise performance and uptime.
   Our operation services include climate control, power, and connectivity backup options tailored to your requirements.
- Regular and proactive onsite maintenance from a dedicated team helps identify and address potential issues, extending the longevity of equipment.
- We help design facilities keeping in mind Australian Standards and local authority regulations for safety and fire protection.



# Reliable connectivity Telstra InfraCo



Our extensive fibre infrastructure across Australia offers several key benefits that make it a reliable and efficient choice for connectivity with a comprehensive variety of options, enabling connectivity across metropolitan, regional and rural areas. This wide coverage helps businesses maintain robust and reliable communication networks regardless of their location.

Telstra's wider portfolio of fibre options in metro areas is available to further enhance our service offerings. This diverse range of fibre solutions enables businesses to have access to the most suitable connectivity options for specific needs.

The network's geographically redundant fibre path designs enhance reliability and resilience, supporting highly dependable connectivity even in the event of a failure in one part of the network. This is crucial for maintaining ongoing operations and minimising risk of downtime.

### Telstra Wavelength (lit)

Experience high-capacity, low-latency, point-to-point connectivity with our advanced optical fibre Wavelength services. Supported by a vast, diverse network infrastructure with unique three-route architecture between most capital cities, Wavelength services provide connectivity between network points of presence (PoPs), offering scalable bandwidth options (1Gbps to 400Gbps) and resilient-design data transmission across Australia. Depending on your resiliency needs, you have the option of selecting from either and Unprotected service, Core Restoration or Protected Wavelength service.

# ( Telstra Dark Fibre (unlit)

Unlock the benefits of control and flexibility with our Dark Fibre services, offering diverse connectivity options between sites. Choose between Intercity Express (ultra-low loss) and Intercity Foundation (low loss) fibre types, or our existing fibre footprint with flexible endpoints including data centres, customer facilities and Telstra InfraCo sites. We provide the fibre while you provide the equipment of your choice, giving you full control over your network, enabling a high reliability of up to 99.95% uptime target.

Note: For more information on our fibre services visit our website: https://infraco.telstra.com.au/solutions



# Power resiliency



Our power resiliency options provide multiple layers of backup power, including commercial mains power, emergency power plant (EPP) with an automatic transfer unit (ATU), standby generator plant (SGP) and uninterruptible power supply (UPS). The framework is designed to handle various power-related contingencies, allowing quick recovery from unexpected power disruptions. We can customise some of the power requirements you may have. Examples of the key power architectures we deploy:



### Simple (small) sites

Our Simple sites use commercial mains power with provisions for connecting an EPP with ATU capability. This setup supports the connection of temporary generators as needed.



### Essential (medium) sites

For Essential sites, we provide a robust power configuration featuring AC mains power backed by a stationary automatic start SGP. With up to 250kW of capacity, this setup helps minimise disruption during short power interruptions.



### Complex (large) sites

Our Complex sites cater to data centre-like requirements with AC-powered equipment. We recommend implementing UPS systems with double conversion, which delivers resilient AC power to your equipment. Grid interactive UPSs with a switching time of around 10 milliseconds are also available, for power continuity.



# Off-the-grid sites

For off-grid solutions, we offer solar panels and batteries, or a combination of solar panels, batteries and generators. Depending on your needs, the output can be 50VDC or AC. Smaller sites typically do not use generators, but larger loads over about 1.5kW may require one generator, or for loads of 3-5kW two generators, with the ability to scale up to 25kW or more.

Power Resiliency options	Mains + Provision for EPP through an ATU	Mains + Standby Generator Plant (SGP)	Mains + SGP + Uninterruptible Power Supply (UPS)	Off-Grid Power option: Solar + Batteries + SGP
Total power standard options	Up to 25kW	Up to 250kW	Up to 200kW	Up to 25kW
ATU Features	Connection point for temporary generator, monitors power quality	NA	NA	NA
ATU Switchover mechanism / time	If temporary generator, onsite switching time is < 5 minutes	NA	NA	NA
Standard SGP configuration options	NA	Diesel, from 1 to N+1 From 20kW to multi-MW	Diesel, from 1 to N+1 200kW to multi-MW	Diesel, 1 or 2 (where used) Up to 50kW
SGP switchover time	NA	Normally configured to < 5 minutes	Normally configured to < 1 minute	NA
SGP Fuel Capacity (standard configuration)	NA	24 hours' reserve	24 hours' reserve	Multiple weeks' reserve
UPS Standard features	NA	NA	Double conversion, VRLA batteries or rotary	NA
UPS Standard capacity	NA	NA	From 50kW to 500kW	NA
UPS switchover time	NA	NA	< 10ms – no break power	NA
Solar panels standard features and configuration	NA	NA	NA	Industry standard silicon solar panels with multiple redundant power conversion devices



# Innovate with confidence

At Telstra InfraCo, we offer expert support to help you streamline and manage the risks with your infrastructure projects, for a smooth and tailored service experience.

Our customer-first culture means we're flexible in the way we work, right from ordering to management, making it easy to select, tailor, commission and adjust end-to-end service management, so everything goes smoothly.



### Simplifying your infrastructure design and deployment

Our specialists are ready to help you get operational quickly with everything from pre-configured, move-in-ready colocation spaces to comprehensive design and construction support for greenfield satellite communication sites.

We offer flexibility, from rack spaces to tailored design, integration with our fibre connectivity and data hosting services at our data centres. This end-to-end approach leverages our expertise in satellite ground stations, fibre connectivity, data centre colocation and other complex infrastructure, providing you with expert assistance whenever you need it.



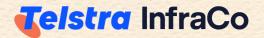
### Security and Compliance

At Telstra, we appreciate that our global customers require our support and commitment to comply with a range of regulations and industry standards, both national and international, including US Trade Controls and US Federal Acquisition Regulations (FAR). We have specific and ongoing training requirements for our staff to enhance their understanding of these matters. We have channels to report unethical behaviour, promoting transparency and accountability. You can have confidence that we operate with integrity and are experienced to meet required regulatory and contractual obligations.

Our sites are designed to high standards of reliability and performance, supporting uptime for satellite ground station operations. Drawing on decades of security expertise maintaining Australia's leading communications infrastructure with adherence to stringent security requirements and certifications, we can offer a combination of physical and digital security monitoring to support critical business operations. These rigorous security measures mitigate risks like break-ins, equipment failures and distribution path interruptions, even in remote locations.

Our facilities are continually monitored by professionals who detect faults and respond rapidly to meet comprehensive service levels, uptime, and maintenance agreements. Some of the industry-recognised standards that Telstra InfraCo can apply to your sites include:

- Compliance with ASIO security levels and PSPF requirements
- Defence Industry Security Programme (DISP) compliance
- ISO Standards 27001, 14001, 9001, 45001
- · SOC 2, PCI DSS
- ASHRAE Standards compliance





### Our rapid response protects your interest

The InfraCo Network Operations Centre (INOC) team manages infrastructure remediations and coordinates responses during natural disasters and other significant events, such as extreme weather, unplanned disruptions, and pandemics. Additionally, the INOC provides operational responses and establishes points of presence during the High-Risk Weather Season (October-April).



## Comprehensive monitoring and infrastructure services

Our team of experts are here to support you with high levels of protection and operational efficiency. Some key highlights of our capabilities include:

- 1,700+ sites with Electronic Access Control Systems (EACS) capabilities including break glass and motion detection
- 220+ CCTV-enabled sites
- 320+ with mobile-credentialed e-locks
- 24/7 security personnel as required at select sites
- ~600 locations nationally with Stand-Alone Power Systems (SAPS) for off-grid solutions including solar capabilities
- 35,000+ pole inspections, 13,000+ pits replacements and 2,500+ manholes repaired or replaced per annum
- 30,000+km of ducts providing access to customers
- · Pro-active monitoring of 57,000+km of fibre
- ~300+ km sheath of fibre replaced with active lifecycle management
- · Aerial and ground inspections conducted



# Big opportunities. Small footprint.

At Telstra, sustainability is always front of mind. Our Energy Reduction Program won the Leading Energy User award at the National Energy Efficiency Conference in 2022 and the CommsDay Best Sustainability Initiative award in 2024.

We are targeting a 70% reduction in absolute scope 1 and 2 emissions and a 50% reduction in absolute scope 3 emissions by 2030, compared to our 2019 financial year baseline.

We recycle network waste, and we recycle or responsibly dispose of decommissioned equipment and materials from our sites, minimising environmental impact while maintaining security.

# The world's in reach



Satellite ground stations provide the essential link between satellites and the terrestrial network. Partner with us to connect your satellites to the world.

# Ready to go?

Check if you can set up a new satellite ground station at one of our existing telecommunications sites, or work with us to acquire land and build a site from the ground up.

We also offer a range of concierge services to provide temporary storage of equipment and basic operational support, remotely supervised by authorised representatives.

Gnangara, WA and Oxford Falls, NSW sites are examples of existing teleports we've built, showcasing some of our facilities and services. The table below demonstrates our capabilities and how we can customise solutions for you.

Detail	Site features and solution capabilities		
OLocation	<ul> <li>Choice of a greenfield site or an existing fixed network site or teleport</li> <li>Within 20 km from major capital cities</li> <li>Close to major roads, airports, and seaports</li> <li>Ready access to data centres, terrestrial networks, and international subsea fibre</li> </ul>		
Antennas	<ul> <li>Various C-band, Ku-band, Ka-band antennas including restoration facilities</li> <li>Additionally, tele-housing and earth station hosting of multiple customer facilities</li> </ul>		
Site characteristics	<ul> <li>Quiet location with an extensive and flat terrain profile, surrounded by large distances of natural bushland (Gnangara, WA site) that provides natural attenuation of local interference</li> <li>Large Telstra owned land-lease</li> <li>Visible geostationary orbital arc from approx. 40E to 190E at Gnangara, WA, and approx. 80E to 225E for Oxford Falls, NSW</li> <li>Sky visibility for NGSOs in some areas down to 5 deg minimum elevation angle for Gnangara, WA, and 10 deg minimum elevation angle for Oxford Falls, NSW</li> <li>Low precipitation rates</li> <li>Low seismic rates</li> </ul>		
Essential safety and compliance	<ul> <li>Telstra complies with Australian Standards and local authority regulation for essential safety and fire protection</li> <li>Fire protections systems onsite include FH &amp; FHR, VESDA, Smoke and Thermal Detectors and water &amp; gas suppression</li> </ul>		



Detail	Site features and solution capabilities
Site security / CCTV	Electronic access control systems and sitewide security camera setup
HVAC/Chiller arrangement	N+1 Chiller and HVAC plant availability
HVAC standards	Australian, ASHRAE and Telstra Standards
Site power configuration	<ul> <li>N+1 Substation and MSB availability</li> <li>N+1 Standby Generator Plant</li> </ul>
Site backup power configuration	<ul> <li>N+1 Generator availability</li> <li>&gt;60min DC system battery reserves on DC power systems</li> <li>&gt;15min UPS system reserves on UPS</li> </ul>
((o)) Antennas/masts standards and configurations	Telstra InfraCo can provide space, structural supports and concrete slabs, compliant with Australian standards, to meet bespoke antenna solutions





Gnangara WA Oxford Falls
NSW



# Satellite Ground Station solutions

# **Contact Us**

To find out more about our satellite ground station solutions and how we can assist you, send us an enquiry here or connect with your Telstra InfraCo team for more information



Visit us: <a href="https://infraco.telstra.com.au/solutions/satellite-ground-infrastructure-services">https://infraco.telstra.com.au/solutions/satellite-ground-infrastructure-services</a>