Capability Statement
Company Background

Pactel International is an Australian-based satellite communications provider, operating globally.

Servicing thirty nations, Pactel’s primary mission is to provide remotely-based businesses and communities with peace of mind by keeping them connected with the rest of the world: constantly, reliably and efficiently. Accordingly, we are committed to providing a communication infrastructure that reflects the diversity of our end-user requirements: from small businesses to resource sector through to resellers and wholesalers.

Utilising over 15 years in the telecommunications industry, we have developed solid core network infrastructure using redundant connections to primary interconnection and peering points in Australia at Global Switch, Equinix, Perth iX and Vocus Sydney Data Centres for internet and/or corporate networks. Our Mobile Switching Centre (MSC) and VoIP gateways are co-located at these premises to serve GSM mobile services and connection to the PSTN and PLMN.

Pactel International operates multiple hubs, to provide both dedicated and shared C-Band and Ku-Band services for a variety of markets.

With a history of continuous profitability since 2004 and no external debt, the Company can finance large-scale deals during short lead times.

Pactel International is committed to the highest level of customer service. With the head office and 24x7 NOC in Sydney and offices throughout the Asia-Pacific, Pactel International is well placed to offer service and support to all types of customers in the region.
Products & Services

Network Management System & Reporting tools
Our Customers

Wholesale
- ISPs
- Telcos
- VADs
- Resellers

Resources & Utilities
- Mining
- Oil & Gas
- Construction
- Engineering

Government
- Military & Defence
- Search & Rescue
- Remote Postings
- Education

 Corporates
- Private Entities
- SOHOs
- Enterprises
- Consultants

Customer Testimonials

“Congratulations for the work done before and during the changeover (of the IP Trunks), the support and the quality of work on site, which has allowed us to minimize downtime during the changeover. The load sharing will also enable us to better utilize the space segment resulting in lower ongoing costs.”

Jacques Pambrun, Director of FCR Wallis and Futuna, France Telecom Group.

“Pactel provided Quintessential Resources with a resilient satellite link that is not affected by heavy rainfall, often experienced at our remote exploration site in PNG. Overall, Pactel delivered an exceptional quality service with professional and responsive support. It was a pleasure dealing with a company that understood and responded well to our needs.”

Paige McNeil, Managing Director - Quintessential Resources Ltd
Project Snapshot

Global Network
Satellite Access & Points of Presence

Satellites
Existing coverage is available on the following satellites (others available upon request):

- IS 904 @ 60°E
- NSS 6 @ 95°E
- Apstar 6 @ 134°E
- IS 701 @ 157°E
- IS 18 @ 180°E
- IS 19 @ 157°E
- NSS 9 @ 183°E

**Upcoming**: IS19

Points Of Presence

- Sydney
- Perth
- Brisbane
- Hawaii
- PNG
- Indonesia

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Coverage Maps
Core Network Capabilities

Company satellite infrastructure is built to support major telecommunication carriers for voice and data services. We have created a diverse-carrier, fully redundant core network based on the major peering points in Australia: Equinix, Global Switch & Perth iX Data Centres.

Due to our experience with satellite links (some as large as 90 & 155Mb), we have been able to design links with higher modulation and coding, meaning that we use less satellite bandwidth to deliver higher throughput.

**Pactel’s Core Network**

<table>
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<tr>
<th>Carrier-Grade Links</th>
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<tr>
<td>Equinix, Global Switch</td>
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<td>&amp; Perth iX Data Centres</td>
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| Fully Redundant Network              |
| Bandwidth Efficient                  |
Satellite Network Capabilities

The company key satellite capability lies in its ability to design a network to entirely fit customer requirements. Our satellite engineers have designed the first Hybrid SCPC Star solution. Utilising a unique network topology, we can provide a dedicated SCPC trunk from the user back to the hub while also sharing bandwidth to other sites in the same group. Consequently, this network design ensures efficient design, minimum latency and guaranteed bandwidth capacity.

Other satellite network capabilities include:

**VSAT IP** - Pactel’s VSAT IP Solutions are based on the industry-leading technology in modem and Hub platforms. Designed to provide 2-way broadband connectivity, Pactel uses a range of C-Band and Ku-Band transponders to offer flexibility & redundancy. Dynamic allocation of bandwidth between multiple sites is also possible across all platforms.

**Private WAN** - Pactel’s private WAN solutions facilitate reliable, secure communication between the remote sites. The solution can be implemented through a number of different technologies and network topologies (SCPC, Star and Hybrid SCPC Star) to ensure consistency with customer network design and objectives.

**Seamless Wireless & Voice Integration** - We can integrate wireless & voice distribution across any network with a hotel-like log-in system and user control incorporated. The wireless integration is particularly useful for the worker welfare networks, allowing workers to use their own devices (BYOD).

**Mobility Applications** - Utilising our Ku-Band platforms, we support a wide range of satellite mobility systems, particularly suitable for resource companies requiring frequent site relocation. Providing coverage across Australia, PNG & East-Timor, the platforms enable usage of more portable and cost-effective equipment.
GSM Network Capabilities

Pactel International is one of five mobile operators with transmission licenses and own networks. Our fully-featured cellular mobile telephone system is a standalone GSM operation, which is not roaming nor carrier limited. Therefore, it allows end-users to make calls using their standard mobile phone and their existing sim card. Pactel operates its own MSC connected to the PSTN and PLMN, so calls are directly routed by us to landline and mobiles anywhere.

Our GSM network allows for a cost-effective network to be rolled out even in extremely remote locations. It can utilize any existing IP connection and offers a range of GSM solutions to accommodate any remote market, ranging from a single site to independent rural communities.

Private GSM Solution
Simple administration
No carrier limitations
Voice Network Capabilities

Operating as a wholesale transit provider, Pactel’s voice platform enables connectivity between the various carriers in the region. Acting as a voice hub, the need for each operator to arrange multiple bilateral agreements is removed, instead relying upon Pactel to provide this connectivity.

The key advantage of using ToIP (Telephony over IP) within our overall network is that it simplifies the switching and transmission infrastructure considerably and enables us to leverage the latest IP technology.

Pactel has direct interconnect agreements with all the major carriers in the region ensuring the highest level of performance and optimal cost to our customers. Connections to carriers are both in the IP domain and the traditional TDM format (C7, ISDN, R2).

QoS
When connecting in the IP environment for voice, high grade QoS management is essential. Pactel’s QoS-based services ensure better quality & service levels for voice traffic. Protocols such as RTP and Signaling (SIP and/or H323) are given higher priority than standard IP traffic, ensuring voice packet delivery without packet loss, delay and jitter.

Performance Reporting and Management
Real time monitoring of network performance is imperative in the supply of quality voice services. Pactel’s voice performance parameters are measured across all sections of the network, utilising our newly developed CDRA application interface. The product allows customers to monitor specific performance figures (such as ASR, ACD, AHT) and financial information stored in the warehoused database.
Value-Added Services: NOC Support

Pactel operates an Australian-based 24x7 Network Operations Centre (NOC), which provides multi-tier support and centralised management across all sites within our network.

All our NOC engineers adhere to specific network support procedures, which allow them to proactively monitor customer network environment and detect possible issues before they occur. Every issue is automatically recorded within our database to ensure rapid response time.

Utilising over 30 network performance metrics, including jitter, latency, throughput and equipment status, we ensure all situations that can affect network performance are considered.
Pactel’s performance monitoring capability represents an online management portal, which allows customers to remotely log-in and monitor their sites on a continuous basis. Using the award winning software, we can provide automatic and on-demand reporting on all aspects of customer networks:

**WAN Bandwidth Usage:** identification of traffic from all users and applications, bandwidth leakages, usage patterns, protocol analysis and throughput.

**VoIP Performance:** latency, packet loss, ASR, CDR, jitter and financial analysis (for carriers).

**Equipment Monitoring:** temperature, RF Levels and CPU Loads.

**External Interference:** sun outages, rain fade or objects which can interfere with the satellite signal.

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<td>Equipment Status</td>
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<td>Financial Statistics</td>
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Monitoring Features
Value-Added Services: Bandwidth Management

The satellite space segment is the most expensive resource of the communications network, hence it is important to optimise its use. Pactel’s key capability lies in its leading ability to optimise the delivery, performance and profitability of satellite networks.

**WAN Acceleration**

We employ compression and data de-duplication technology, which compresses and stores a single instance of information across all remote sites and offices. The result is reduced bandwidth usage and accelerated application performance.

**Application Filtering & QoS**

Pactel’s filtering can be configured to create customer-defined protocol groups as well as different access policies based on user group types. The application filtering service allows our customers to ‘shape’ and filter their IP traffic to suit specific needs.

Utilising our technical capabilities in QoS, and relationships with world renowned suppliers, we guarantee bandwidth to our customers’ time-critical and real-time applications. Our policy and time-based bandwidth management allows us to assign multiple levels of QoS based on protocol and IP address range.

**Caching**

Deployed within the operator’s network, Pactel’s caching solution accelerates and controls traffic from bandwidth-consuming applications such as Youtube, P2P & File Download.

The technology stores all media and web content on the local server, eliminating the need to send the same fragment of information twice.
The Bottom Line: Why Pactel International?

Scalable Financial & Technology Assets
- Ability to finance large-scale projects
- Efficient execution of small-scale projects
- Flexible network design
- Hassle-free service upgrades

Global Presence
- Coverage across 8 satellites & more coming
- Geographically Diverse: 7 teleports globally
- Network support across all timezones

Global Buying Power
- Competitive bandwidth pricing
- Competitive equipment sourcing = maximised TCO
- Multi-transponder satellite capacity
- World-renowned suppliers & systems integrators

Value-Added Services
- 24/7 Sydney-based NOC Support
- Access to online network management portal
- Advanced reporting capabilities
- Bandwidth management services
Network Example
Case Studies: Wholesale

Corporate C-Band Hub: Direct Connectivity from Port Moresby to Remote Provinces of PNG

In conjunction with Remington Communications, Pactel International launched a new Shiron DVB-S2 ACM system hub in Port Moresby. The new hub now provides domestic corporate communication services to PNG to allow direct connectivity between Port Moresby and remote provinces of the country.

The multi-year contract involved Pactel installing, commissioning and operating the high speed satellite transmission platform. The new platform runs on IS-18 satellite and can provide both point-to-point and point-to-multipoint satellite links.

Large Fibre Back-Up: Service Provider in the Pacific

Pactel International signed a multi-year contract with OPT New Caledonia (a major service provider in the region) to create and operate a 90/40Mb satellite back-up link for their existing fibre-based networks.

This link enables automatic redundancy of the most critical applications of IP traffic in case of a fibre cut, including voice, video and data.

New Satellite Link Between US and Cocos and Christmas Islands

Pactel International established a new satellite link between their US Hub and the Cocos and Christmas Islands, using the latest C-Band technology. The new service addressed the immediate expansion needs for the local Internet service provider, CIIA.

The link is designed to carry Internet traffic to/from the Islands. The new DVB-S2 platform is directly connected to Pactel’s redundant backbone and provides the Islands’ residents with direct access to US Tier 1 Internet backbone, ensuring higher Internet speed and reliability.
Case Studies: Resources

**Dual Corporate and Welfare Network for Emerging Miner**
The end-to-end, managed satellite service installed at Macarthur Minerals’ Lake Giles exploration camp is designed to meet both the business needs of the company and the personal needs of its staff living onsite. The service supports simultaneous, but separated, corporate voice and data applications and recreational traffic.

Supporting both the needs of the site and the needs of the site staff leverages Pactel’s bandwidth management capabilities. Pactel’s engineers adopted the latest Quality of Service (QoS) technology to prioritise voice telephony and corporate data over personal traffic as well as WAN acceleration technology to optimise the satellite link.

**An End-to-End Solution to Remote Oil Rig**
Pactel International designed a network, which could provide high speed internet, data & voice applications to and from remote oil rig locations.

The network represented a complete turnkey solution, based on the C-Band VSAT platform to provide a link from the two remote operational sites in PNG back to Sydney. The link supports voice and data applications as well as allow for exploration sites to be remotely monitored by the data centre.

**Bandwidth Pool & Portable Solution for Frequent Site Relocations**
To overcome the communication and logistical challenges associated with frequent site relocation, Horizon Oil required a VPN solution which would combine the portability of a quick deploy equipment with reliable office-like connectivity, and share the bandwidth with their fixed sites.

The solution included 2.4 meter semi-fixed antenna, a ruggedized equipment rack and a satellite service with dedicated bandwidth. An additional QoS platform ensures that the priority is given to the voice
Case Studies: Government

Carrier Hub to Support Australia's mission in the Middle-East
The new Perth-based carrier-grade platform runs on the Intelsat IS-904 satellite to provide extended coverage into the Middle-Eastern regions.

Initially designed to provide deployment services into the Middle East for Australian Government, Pactel plans to utilise the platform to further expand into the Indian Ocean region.

Government Welfare Network in the Solomon Islands
The worker welfare solution represents satellite wireless local network across accommodation huts for Australian Government's employees in the Solomon Islands, providing them with internet access. QoS policies have been applied to dedicate bandwidth to the welfare applications such as Skype, Social Media and Youtube. In addition, Pactel’s WAN Acceleration technology ensures the bandwidth is efficiently utilised and network performance is maximised to provide the optimal user experience for Australian workers.

Connecting Remote Police Stations in Remote North Queensland
In conjunction with Skynet Communications, Pactel International designed a solution, which could supply high speed data services into remote police stations which would serve as a WAN extension to the existing Queensland Police Network.

The final solution enabled several sites to utilise or share the same bandwidth, at different times of the day.

Queensland Police required a proactive monitoring service, informing them once the link indicates the Police station is disconnected. Using the QoS platform, Pactel applied a certain set of rules for every site due to some stations being powered down overnight with no need for alarming.