
PSTN Interconnection

Voice interconnection services connect Telecom's Public Switched Telephone Networks (PSTNs), both fixed and/or mobile, to other service provider's networks - allowing calls to be exchanged between networks.



telecom™

Wholesale



PSTN Interconnection

The ability to connect networks is the essence of a competitive telecommunications industry. End-users on one network have to be able to call, and receive calls, from other networks.

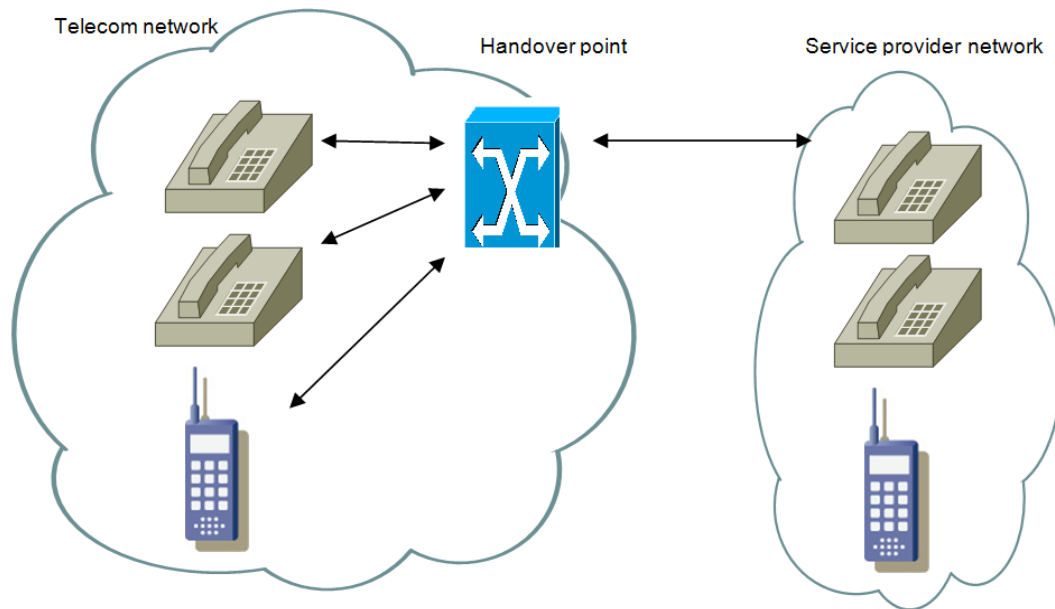
Interconnection is suitable for service providers who have high traffic volumes, and who have (or who are prepared to add) network infrastructure

Benefits

Fixed/Mobile PSTN services allow service providers to be in a position to:

- **Offer end-users** a full range of telecommunications products and services
- **Supply services** more independently, without needing to purchase complete services from Telecom
- **Take advantage of cost efficiencies**
- **Make use of** Telecom's established interconnection agreements with other telcos.

PSTN Interconnection

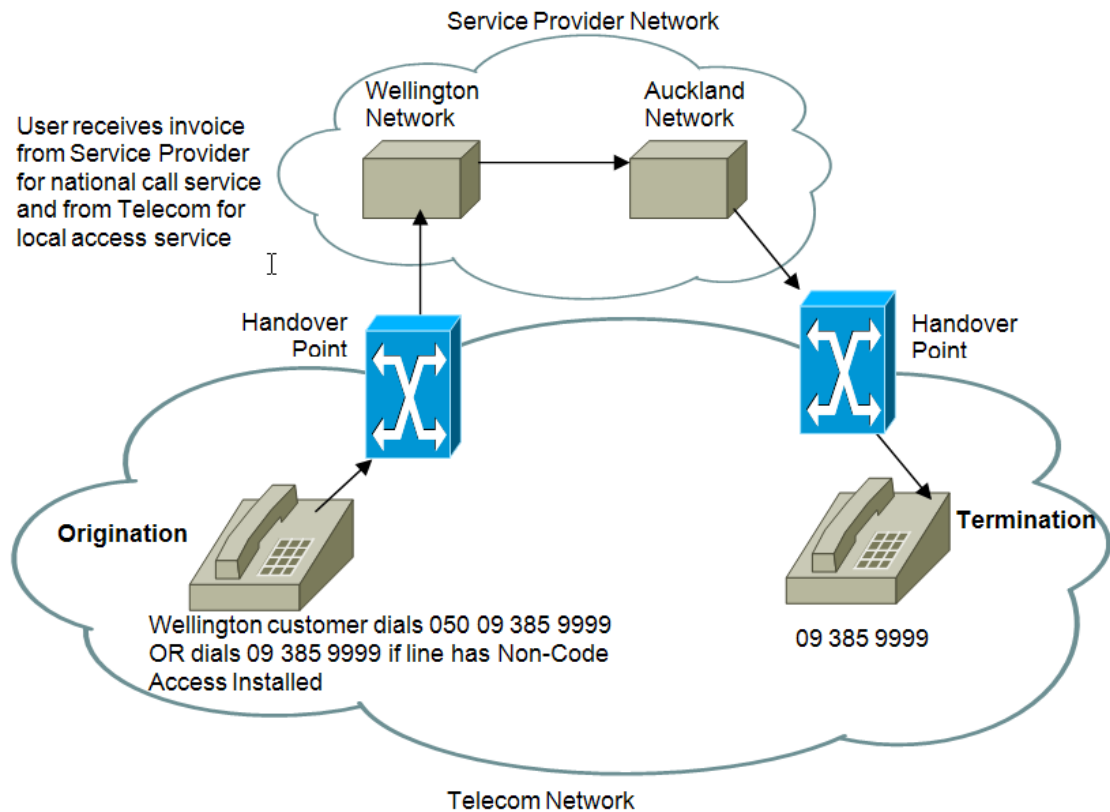


How it works

Interconnection includes functionality such as:

- **Local service interconnection** - provides local, long distance and international services to end-users connected to a service provider's network, using Telecom's international and domestic originations and terminations. This facilitates the provision of local access services to end-users. Telecom does not bill end-users as they do not receive local access service from Telecom.
- Local service interconnection also enables service providers to receive dial up Internet calls from end-users on the Telecom network. Two specific number ranges are allocated for this purpose – 0873 and 0867.
- **Toll bypass interconnection** – allows service providers to provide national, toll-free (0800/0508), or international services to end-users using Telecom's domestic originations and terminations. End-users can continue to take their local access service from Telecom; however toll calls effectively "bypass" the Telecom long distance network. Telecom bills the end-user for local access and the service provider bills them for the long distance service. Service providers can make this service simpler for end-users by using non-code access (see Associated Products section).

PSTN Interconnection



Call handover arrangements –

Origination/Termination services have been designed around a number of specified handover points, where calls are passed to and from a service provider's network. The country is covered by 102 Local Interconnect Calling Areas (LICAs). Twenty-four are designated as major LICAs in which call handovers occur. There are 78 minor LICAs, each of which is associated with one major LICA. There are also three specified mobile handover points which are subject to the regulated mobile termination rates.

The end-user's (caller's) telephone number and the place at which the call is handed over to/from your network defines the origination/termination service provided. Service providers may not wish to receive/deliver traffic at all the specified handover points. The National Transport service (see Associated Products section) carries the call traffic to or from the areas covered by these handover points and delivers it to the service provider's network at the handover points selected, or to the Telecom end user, as the case may be.

Calls are handed over from the Telecom network to the service provider's using 2Mb/s ITU G703 links. The commercial terms and conditions determine which party is responsible for providing the links in respect of call types in each direction.

International calling – if service providers want to provide end-users with international calling services they can choose to use Telecom's international network and relationships rather than having to establish their own.

Transit services – Telecom interconnects with most providers of telephone services in New Zealand, including mobile operators. As a result we can save you the hassle of negotiating bilateral interconnection arrangements. Through agreements with these providers, Telecom can offer a transit service to enable calls to be carried between a service provider's network and third party networks.

PSTN Interconnection

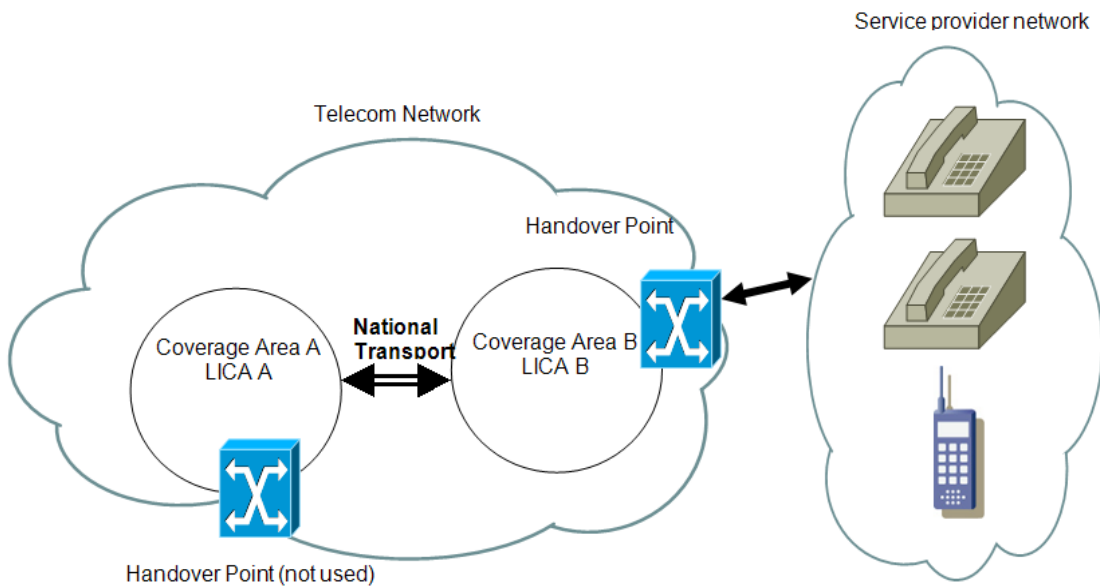


Mobile PSTN interconnection services – specific Interconnect services are available for connection to and between mobile networks:

- **To Telecom mobile from a fixed network** – through interconnection arrangements we provide the ability to send calls to, and receive calls from, the Telecom mobile networks. This is a transit arrangement, so service providers do not need separate interconnections for calls to mobile numbers. Through this service it is possible to offer end-users a fixed to mobile calling service.
- **To Telecom mobile from a mobile network** – if a service provider has a mobile network there may be value in having a direct interconnection arrangement with Telecom's mobile network.

- **Transit to other providers of mobile services** – we interconnect with all significant providers of mobile phone services in New Zealand. We can save service providers the hassle of negotiating multiple bilateral interconnection arrangements. Through Telecom's agreements with these providers, we offer a transit service to enable calls to be carried between a service provider's network and other mobile networks.

Other services include 111 emergency call services, Telecom Operator Assistance and Information Providers (0900).



PSTN Interconnection



Associated Products

National Transport - National transport provides origination or termination on Telecom's fixed PSTN combined with long distance carriage of the call to (or from) the point where it is handed over to, or from, a service provider's network.

This service is used where service providers want to receive or deliver traffic at or to a handover point which is not the one that serves the coverage area in which the call originates or terminates.

National transport provides an alternative to service providers' own links and premises, or leasing links and/or premises from a third party. It is a casual purchase service, i.e. service providers pay for each minute of traffic Telecom carries. This might be the most cost effective alternative where service providers do not have sufficient traffic from an area to justify putting in a direct link.

Non-code access - allows end-users to select a service provider as their supplier of national, international, and fixed to mobile calls without having to dial additional digits to access another network.

The New Zealand Telephone Numbering Scheme provides for an independent administrator who allocates access codes according to the numbering rules established under the Number Administration Deed (www.nad.org.nz). A service provider is allocated an access code 05xy (where xy stands for the particular digits that the carrier has been allocated) to identify them from other toll bypass service providers. An end-user connected to Telecom's access network who wishes to use a service provider's national calling service to dial the Auckland number 09 321 9876 dials 05xy9 321 9876.

With non-code access end-users do not dial the extra numbers. Non-code access is available on a service by service basis for national calls, international calls, and fixed to mobile calls.

International Call Carriage - Telecom Wholesale can also offer an international call carriage service through a Telecom business division, Telecom New Zealand International (TNZI). This service can be taken on a contract basis if you have no, or a limited, international network. It can also be taken on a casual basis as an overflow service for peak calling periods.

Local and Mobile Number Portability (LMNP) - allows an end-user to transfer their fixed line or mobile service from one service provider to another and retain their original telephone number. LMNP makes it easier for end-users to move between service providers.

Normally, an end-user's telephone number will be changed if they switch from one service provider to another. With LMNP, end-users can change service providers whilst retaining the same number. Number portability is available for local numbers, mobile numbers and for 0800/0508 numbers.

PSTN Interconnection



Requirements

To interconnect with our network, a service provider needs to meet some prerequisites. These include the service provider's network needing to be capable of inter-working with Telecom's PSTNs. Specifically, this means a service provider's network equipment will need to use the ITU G703 transmission standard and CCS7 signalling protocol. Independent testing of a service provider's equipment will be required to ensure it complies with the Permit to Connect (PTC) standards established to ensure networks work properly together and provide a satisfactory service to end-users.

International Call Carriage – calls need to be delivered to Telecom's International Gateway Point of Interconnect (POI). Telecom can provide national transport to carry the calls from end-users to the Gateway POI.

Service providers must also have and maintain the required long term credit rating classification or provide an instrument of financial guarantee to Telecom.

Availability

All Interconnect services (local interconnection, toll bypass interconnection, mobile interconnection) are available at all Major LICAs.

For more information contact your Telecom Wholesale account manager or see www.telecomwholesale.co.nz to find out more about becoming a customer.

www.telecomwholesale.co.nz