

# Telstra Wholesale Business Internet™

Product Specification document

IT'S HOW  
WE CONNECT



# TELSTRA WHOLESALE BUSINESS INTERNET™ PRODUCT SPECIFICATION

## PURPOSE AND SCOPE

The Telstra Wholesale Business Internet™ product specification document outlines the features and services provided by Telstra Wholesale Business Internet™.

## CONVENTIONS USED IN THIS GUIDE

The following typographical convention is used in this guide for simplicity and readability: Web addresses, e-mail addresses and hyperlinks are shown in ***bold italics***, for example ***[www.telstrawholesale.com.au](http://www.telstrawholesale.com.au)***.

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# WHAT'S INSIDE

OVERVIEW OF TELSTRA WHOLESAL BUSINESS INTERNET™	4
ABOUT THIS DOCUMENT	4
ABOUT TELSTRA Wholesale Business Internet™	4
TELSTRA WHOLESAL MANAGED SERVICE HUB™	4
FEATURES OF TELSTRA Wholesale Business Internet™	5
SUPPORT	5
TELSTRA Wholesale Business Internet™ Standard PLUS	6
UNI ATTRIBUTES	6
INTERNET ATTRIBUTES	7
SERVICE ATTRIBUTES	9
NETWORK OPERATIONS AND MANAGEMENT	9
SPECIAL SERVICES	10
FEE FOR SERVICE	10
SPECIAL LINKAGE CHARGES	11
INTERFACE DISTANCE RULE	13

# OVERVIEW OF TELSTRA WHOLESALE BUSINESS INTERNET™

## ABOUT THIS DOCUMENT

This document describes the important features and services provided by Telstra Wholesale Business Internet™.

## ABOUT TELSTRA WHOLESALE BUSINESS INTERNET™

Telstra Wholesale Business Internet™ is a best-in-class internet solution for business customers:

- A complete, ready-built solution which delivers internet to standalone locations, on a site-by-site basis within Telstra's fibre Network Coverage Area,
- Offering the best geographic coverage available from a single provider via the industry-leading Telstra Wholesale fibre network,
- Covering 25,000+ multi-tenanted business sites within Australia, all pre-enabled to be lit without delay,
- Choose from multiple bandwidth options on the Standard Plus option: 100Mbps; 200Mbps; 300Mbps and 400Mbps,
- A unique online self-service portal allowing your team to login to our platform with a secure, single sign-on.

## TELSTRA WHOLESALE MANAGED SERVICE HUB™

The Telstra Managed Service Hub™ is a self-service web base interface for Telstra Wholesale Business Internet™ which allows you to:

- Manage opportunities
  - Perform service qualifications on prospective opportunities, this includes requesting manual service qualification in the portal if the site location is not qualified by the portal, for support by Telstra Wholesale team,
  - Raise orders, keep across the stages of delivery and use the follow option to be kept informed as the order progresses to delivery,
  - Know what is to be billed once service is completed.
- Manage active services
  - Allows the modification of orders,
  - Attain more IP addresses to be added to the services,
  - Able to use self-help tools to assist you determine where faults may have occurred,
  - Able to raise a trouble ticket with Telstra Wholesale for any faults associated with the service provided
- Provide options for product bundles in the near future.
- Manage your staff
  - Simple way to invite staff to your instance of the Telstra Managed Services Hub™ and assign them the roles to suit your organization structure.

## FEATURES OF TELSTRA WHOLESAL BUSINESS INTERNET™

FEATURE	DESCRIPTION
<b>Coverage</b>	Offering the best geographic coverage available from a single provider via the industry-leading Telstra Wholesale fibre network.
<b>Scope</b>	Covering 25,000+ multi-tenanted business sites within Australia, all pre-enabled to be lit without delay.
<b>Simplicity</b>	A complete, ready-built solution which delivers internet to standalone locations, on a site-by-site basis within Telstra's fibre Network Coverage Area.
<b>Scalability</b>	Choose from multiple bandwidth options on the Standard Plus option: 100Mbps; 200Mbps; 300Mbps and 400Mbps.
<b>Self-Serve</b>	Our unique online self-service portal allows your team to login to our platform with a secure, single sign-on.
<b>Assurance</b>	Our fault-finding tools give you more control. Discover where costly faults lie and provide speedy fault response.

**Table 1. Features and Benefits of Telstra Wholesale Business Internet**

## SUPPORT

If you have any questions about Telstra Wholesale Business Internet™, contact your Service Manager.

As a Telstra Wholesale customer, you can report service difficulties online 24 hours a day, seven days a week. Please note the response and restore of your service will depend on the SLA you have ordered.

You can also lodge a service difficulty with the National Wholesale Service Centre (NWSC).

### **Domestic:**

1300 897 378 Option 4

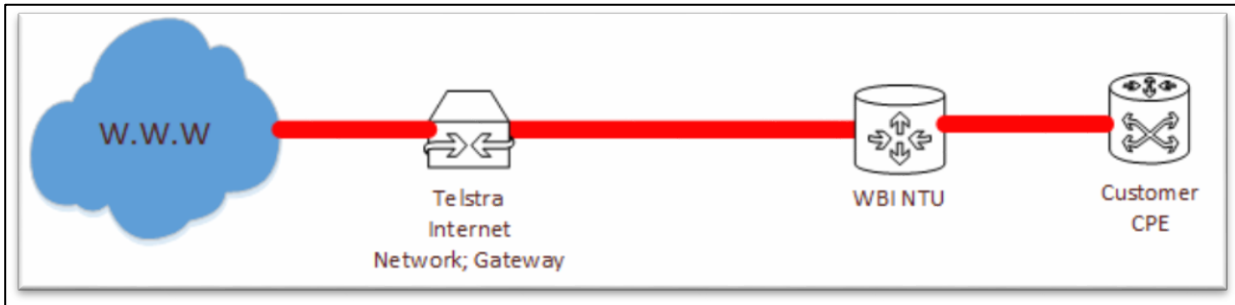
### **International:**

(+61) 7 3236 3290 (Option 1,1)

**Note:** Depending on your enquiry, we may need to consult some of our business partners, and so may not be able to resolve your enquiry immediately.

# TELSTRA WHOLESALE BUSINESS INTERNET™ STANDARD PLUS

The Telstra Wholesale Business Internet™ Standard plus solution overview is described in the following diagram.



**Figure 1. Telstra Wholesale Business Internet™ Standard Plus solution**

The Telstra Wholesale Business Internet™ NTU is the segregation point. The customer CPE connects to Telstra's Internet Network by a Gateway utilising Telstra Fibre.

Note: The NTU is referred Network Terminating Unit which delivers the customer facing User Network Interface that is referred to as a UNI.

## UNI ATTRIBUTES

The UNI is the customer interfacing port at or near the end user site. The following table outlines the UNI parameters that support Telstra Wholesale Business Internet™.

UNI ATTRIBUTE	ATTRIBUTE DESCRIPTION	ATTRIBUTE VALUE
<b>Bandwidth</b>	This attribute allows the user to select the interface speed. The user can select the interface speed as per the data consumption.	The standard available range is 100Mbps – 400Mbps.  Please note: Other bandwidth options are on POA basis.
<b>Interface Type</b>	This attribute allows the user to select the type of Interface supported on the UNI.	The available interface options are: <ul style="list-style-type: none"> <li>• GE 1000 Base LX / LH (SMOF, 1000Mbps Optical)</li> <li>• GE 1000 Base SX (MMOF, 1000Mbps Optical)</li> <li>• GE 1000 Base TX (100/1000 Mbps Copper)</li> </ul>
<b>Availability</b>	This attribute defines the UNI Redundancy options.	Single Uplink
<b>Interface Mode</b>	This attribute allows the customer to select information exchange attributes.	Auto Neg Full Duplex
<b>Frame Size</b>	This attribute defines the size of the Ethernet frame in use for Telstra Wholesale Business Internet™.	The maximum MTU for Telstra Wholesale Business Internet™ is 1546.

**Table 2. UNI Attributes**

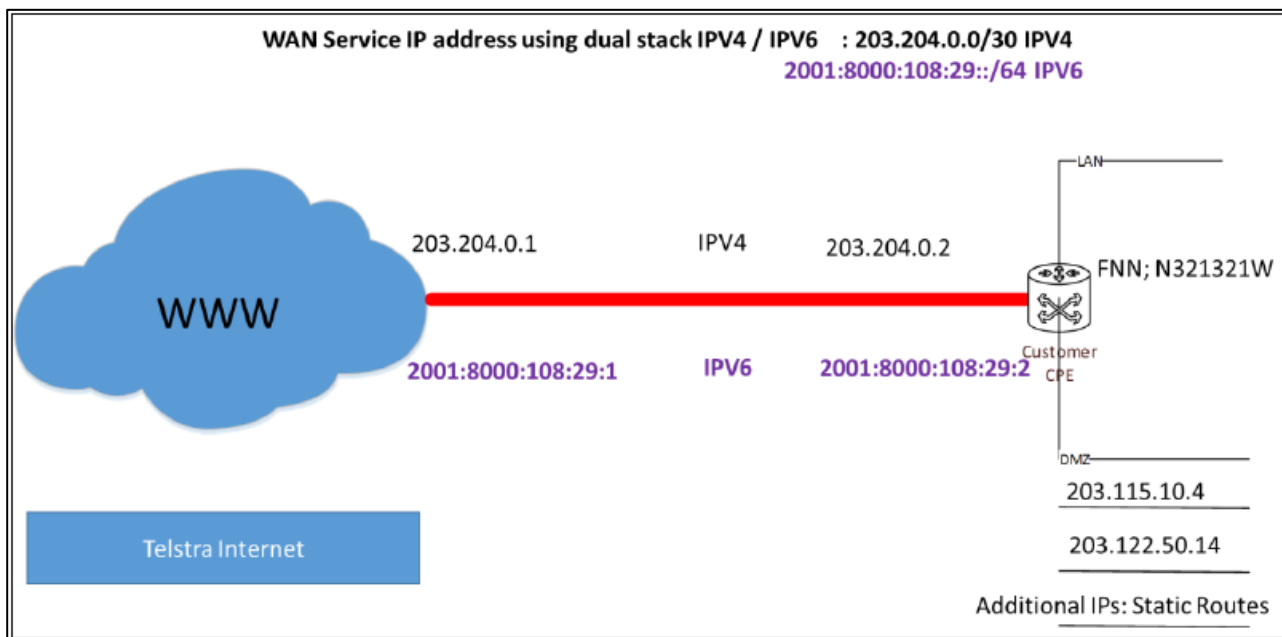
## INTERNET ATTRIBUTES

The following table outlines the Internet parameters that supports Telstra Wholesale Business Internet <sup>TM</sup>.

INTERNET ATTRIBUTE	ATTRIBUTE DESCRIPTION	ATTRIBUTE VALUE
WAN IP Address	<p>A public /30 WAN address is allocated with each service. The format for the WAN service is such that the first usable IP address is assigned to the Telstra Internet Port, and the second IP address is allocated to the customer.</p> <p>DNS entry will be made on the second usable IP Address.</p> <p>IPV6 is allocated for the WAN segment as a /64 set as auto negotiate, which normally allocates the first IP address to the Telstra Internet port and the second to the Customer Router.</p>	<p>Static IP Address (Public)</p> <p>DNS entries are made.</p>
IP Version	IPv4 or Dual Stack Options are available per service.	Dual Stack, IPv4
Additional IP Addresses	<p>The customer can request additional IP addresses for both IPv4 and IPv6. These IP addresses are used for static route requirements that customer may have.</p> <p>Additional IP addresses (using IPv4 as an example) can be set as:</p> <p style="padding-left: 40px;">/30.. 4 IP addresses</p> <p style="padding-left: 40px;">/29.. 8 IP addresses</p> <p style="padding-left: 40px;">/28.. 16 IP addresses</p> <p>The additional IP addresses:</p> <ul style="list-style-type: none"> <li>• Are used for static routes set at the customer premises router and at the Telstra Internet Network routers.</li> <li>• Can be allocated at any time.</li> </ul>	<p>(IPv4): up to /28</p> <p>(16) (IPv6): /64</p> <p>These IP addresses are public and can be added to the routing via static IP addresses.</p>
Contention	The Standard Plus solution is based on best effort internet offering with a contention that is managed at the Telstra Internet router. The contention ratio varies according to the number of active users on the network consuming all available designed capacity at the same time.	Standard Plus has been designed for contention of up to 20:1.
Latency and Packet Delivery ratio	Please see diagrams below.	

**Table 2. Internet Attributes**

The diagram below illustrates how the WAN IP addressing is used and provides an example of the Static Routing with the additional IPs that a customer can purchase.



**Figure 2. WAN Service IP address using dual stack IPv4/IPv6**

**Note:** In case the customer wants to add a mail server then the customer may utilise an additional IP address.

To assist in the management of the IP addresses and internet service, the Management Service Hubs provides an IP Management area. This area allows the customer to setup and administer static routes on the Telstra Routers which delivers your services. The Static IP addresses are added at the Telstra Internet Routers. The customers are required to update the routing tables at their router in order to connect the internet.

The Managed Services Hub™ allows you to do the following:

- Add a static route
- Check connectivity to the internet
- Provide trace route checking



## SERVICE ATTRIBUTES

The following table provides the information about the service attributes of Telstra Wholesale Business Internet™ business plus solution.

SERVICE ATTRIBUTE	ATTRIBUTE DESCRIPTION
SLA	Business: 7am to 9pm Monday to Saturday with 2 hour response and 12 hour restore
Enhanced SLA	Business Plus: 24/7 7 days 1 hour response and 12 hour restore
Delivery	Cat 1 – 9 Business Days from order acceptance Cat 2 – 19 Business Days from order acceptance Cat 3 – 25 Business Days from order acceptance Cat 4 – Will be advised once design has been completed.
Devices	Bring your own devices

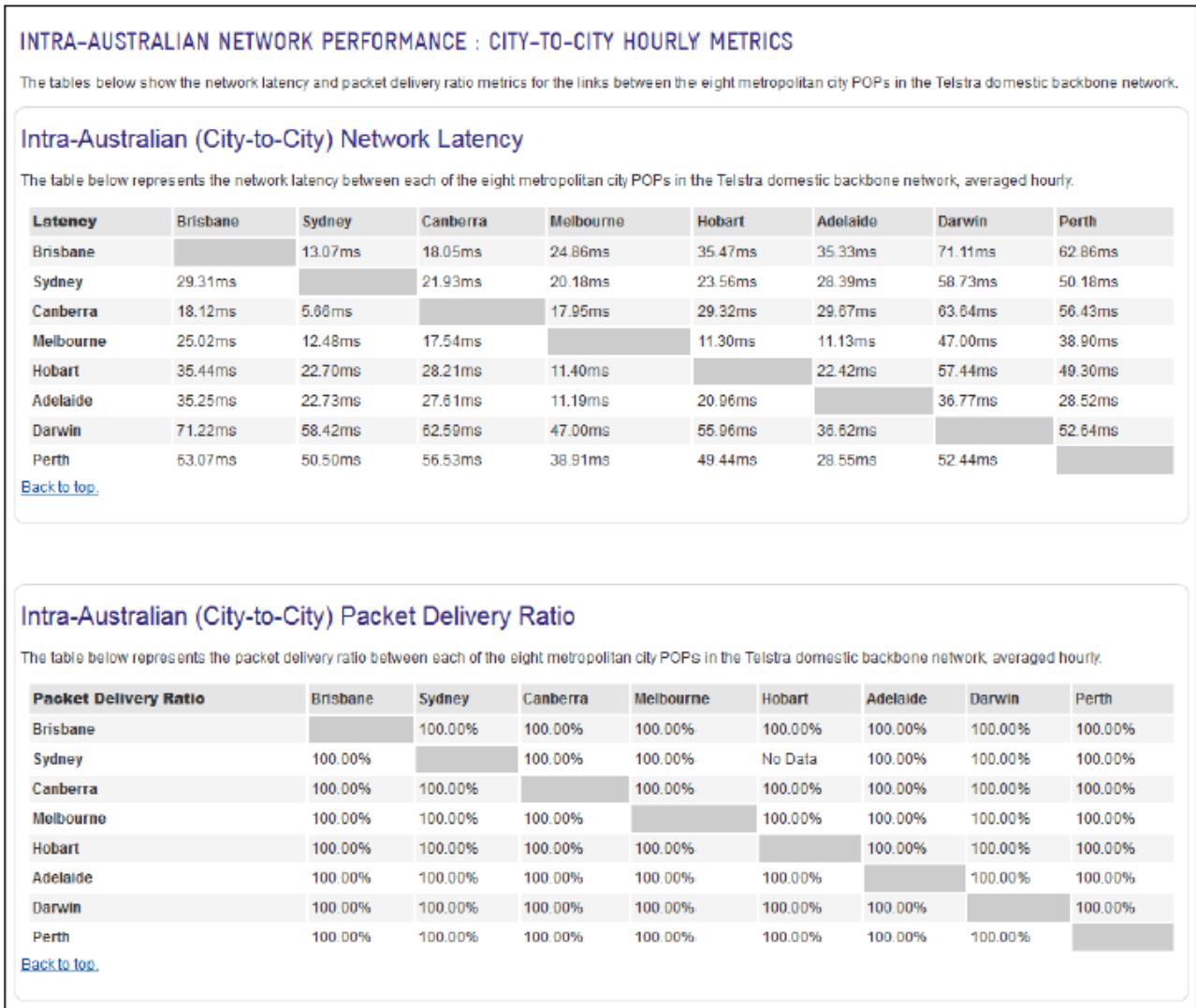
Table 3. Service Attributes

## NETWORK OPERATIONS AND MANAGEMENT

The following figures provides the samples of Latency and Packet Delivery Ratio.

International Network Latency and Packet Delivery Ratio										
Telstra, through its ownership and partnership with Reach, operates an international Internet backbone to provide customers with global Internet connectivity. The tables below contain the monthly average network latency and packet delivery ratio metrics for key international zones.										
Latency	New Zealand	Thailand	Hong Kong	Indonesia	Malaysia	US (West)	UK	Philippines	Singapore	Japan
Brisbane	38.33ms	151.13ms	171.70ms	125.22ms	118.25ms	153.02ms	305.55ms	191.67ms	146.62ms	145.22ms
Sydney	25.98ms	128.07ms	159.33ms	112.91ms	105.47ms	140.63ms	290.87ms	179.31ms	134.06ms	132.81ms
Canberra	30.91ms	138.41ms	164.22ms	117.73ms	116.50ms	145.56ms	299.65ms	184.17ms	139.56ms	137.79ms
Melbourne	37.80ms	133.55ms	171.14ms	112.92ms	105.47ms	152.44ms	298.54ms	191.08ms	134.24ms	144.61ms
Hobart	48.23ms	149.16ms	181.52ms	123.33ms	121.77ms	161.88ms	311.62ms	201.50ms	144.10ms	155.28ms
Adelaide	48.11ms	No Data	180.50ms	112.91ms	111.66ms	162.79ms	311.84ms	201.00ms	134.24ms	154.97ms
Darwin	80.37ms	155.75ms	214.28ms	139.45ms	133.33ms	197.86ms	343.40ms	234.24ms	189.97ms	187.26ms
Perth	75.82ms	128.16ms	208.69ms	112.30ms	105.87ms	190.43ms	343.17ms	229.10ms	134.15ms	182.44ms
Packet Delivery Ratio	New Zealand	Thailand	Hong Kong	Indonesia	Malaysia	US (West)	UK	Philippines	Singapore	Japan
Brisbane	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Sydney	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Canberra	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Melbourne	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Hobart	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Adelaide	100.00%	No Data	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Darwin	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Perth	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

**Figure 3. International Network Latency and Packet Delivery Ratio**



**Figure 4. Intra Australian Network Performance City to City hourly metrics**

## SPECIAL SERVICES

### FEE FOR SERVICE

In certain circumstances there may be a need for additional installation work to deliver the Telstra Wholesale Business Internet™ service. These costs will be identified and presented to the customer for their approval. These costs are referred as Fee for Service, or FFS.

FFS may be applicable for the following additional services as determined by Telstra on a case by case basis:

- Installation such as altering cabling or equipment,
- Maintenance work which is outside Telstra service assurance commitments,
- Repair work (including wiring beyond the first socket and the installation of additional sockets where the installation is neither standard nor non-standard),
- Consultancy for addition, removal, or alteration in the network or network design,
- Equipment configuration file changes (other than complex equipment configuration file changes),
- After sales support for any kind of outages

## IMPORTANT

Fee For Service standard business hours are 8am to 5pm, Monday to Friday excluding public holidays in the relevant place. Telstra considers all other times to be after hours.

Standard business hours and after hours are determined by the state or territory where the relevant service is located/provided.

## SPECIAL LINKAGE CHARGES

In Building Network Extension (IBNE) is an extension of the network boundary point (NBP) where the cabling benefit is for a single customer and is reflected in 'D-H-I' from the figure 5 below.

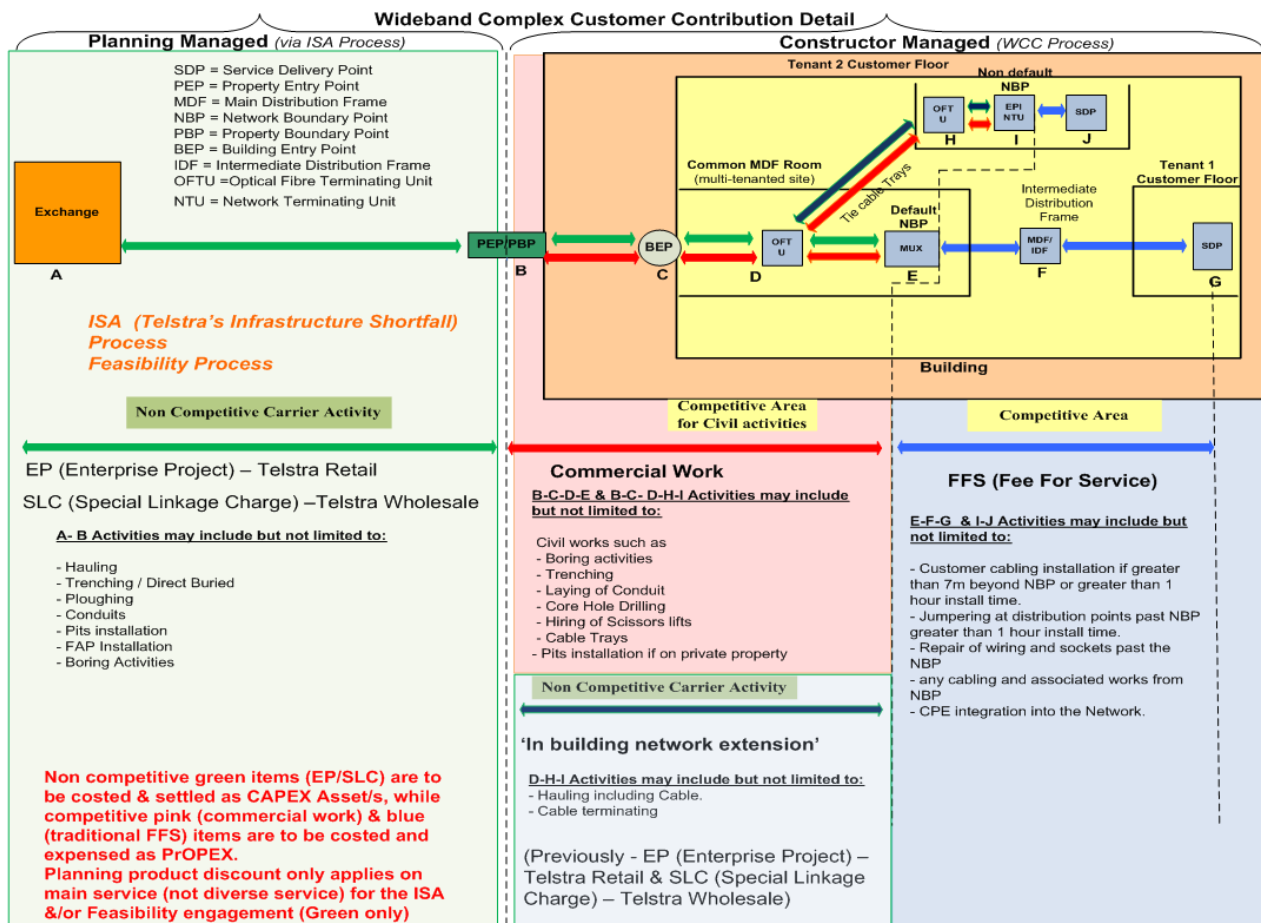
A contractor may be required to perform these activities when carrying out an IBNE. These activities may include, but are not are limited to:

- Installation of Optical Fibre Riser cables
- Installation of Optical Fibre Ceiling cables
- Securing Optical Fibre Cable
- Joining of Optical Fibre Cable

Any Special Linkage Charges or commercial works costs are provided to the customer for approval as a commercial quote and apply in addition to normal installation charges. A feasibility study may be required (charges may apply for the feasibility study).

The following activities are not included under special linkage charges, they are considered as part of commercial work as long as they occur on Telstra's side of the network boundary:

- Core Holes
- Cable Trays
- Conduit Installation past NBP
- Mechanical aids for cable installation



**Figure 5. Complex Customer Installation Model Detail**

In some cases the distance between Telstra fibre point and the end user location may require commercial works.

The commercial work is triggered when there is insufficient infrastructure (conduits, pits, cable tray) to complete an Order in the Competitive Area as per figure 5. The shortage of infrastructure is usually located between Property Entry Point / Property Boundary Point and the Network Boundary Point & / or within a customer building/campus environment.

The following activities are generally covered when carrying out such commercial Works. These activities may include but not are limited to:

- boring activities
- trenching activities
- laying of conduit
- core hole drilling
- pits installations if on private property;
- hiring of scissors lifts
- cable tray installation
- fire Stopping (for fire stopping requirements not covered by FFS cabling)

The activities which involve placing of cable to the Network Boundary Point such as hauling or direct ploughing are not considered Commercial Works. The commercial works is defined by the red line in Figure 1.

A Fee for Service charge may apply for such commercial works.

## INTERFACE DISTANCE RULE

The following table provides information about interfaces used while connected to the network.

<b>PHYSICAL LAYER STANDARD</b>	<b>MEDIA</b>	<b>APPROX. DISTANCE(M)</b>	<b>DUPLEX</b>
10/100/1000Base-TX	Category 5	100	Full (Auto Negotiate enabled by default)
1000Base-SX	62.5µ Multi-mode Fibre (MMOF)	220	Full
1000Base-LX	Single Mode Fibre (SMOF)	10000	Full

**Table 4. Interface distance rule**

# APPENDIX

## LIST OF ACRONYMS

<b>Acronym</b>	<b>Definition</b>
DNS	Domain name system
FFS	Fee for service
IBNE	In Building Network Extension
MMOF	Multimode optical fibre
MTU	Maximum transmission unit
NBP	Network boundary Point
NTU	Network Terminating Unit
SLA	Service Level agreement
SMOF	Single Mode optical fibre
UNI	User Network interface
WAN	Wide area network

# DOCUMENT VERSION CONTROL

VERSION	DATE	CHANGES	UPDATED BY	OWNER
0.1	02/05/2018	Initial version	Mary Perera(MP)	Bruno Romanin (BR)
0.2	02/05/2018	Reviewed initial draft	Helen Wood	Bruno Romanin (BR)
0.3	02/05/2018	Draft Updated with checks from engineering, added Peering & Delay	Bruno Romanin (BR)	Bruno Romanin (BR)
0.4	13/05/2017	Further details on IP addresses	Bruno Romanin (BR)	Bruno Romanin (BR)
0.5	14/06/2018	Added mtu, interface types and distances, FFS	Bruno Romanin (BR)	Bruno Romanin (BR)
0.6	5/07/2018	Moved the document to standard Telstra template	Prahalika Kalla(PK)	Bruno Romanin (BR)