SERVICE SCHEDULE – VPLS

This Service Schedule (including the Optional Service Features Annex) sets out the Service Description and service levels that apply to the Virtual Private LAN Service (**VPLS**).

1 SERVICE DESCRIPTION

1.1 Our VPLS provides multi-protocol label switching (**MPLS**) based layer 2 Ethernet multipoint-to-multipoint connectivity between designated access end points at PoPs on our VPLS Network (**Ports**) and includes other optional services specified in your Order Form (each a **Service**)

1.2 You must specify in your Order Form whether your VPLS is transparent mode (a port-based service) or VLAN mode (a VLAN-based service).

2 BANDWIDTH

2.1 You must specify in your Order Form the amount of bandwidth for your VPLS (**Committed Data Rate**).

2.2 Subject to the terms relating to our Burstable Bandwidth optional service, we will not deliver your VPLS traffic in excess of your Committed Data Rate.

3 SITE SURVEY

3.1 After acceptance of a Service Order Form, we will carry out a service delivery site survey (**Site Survey**) for the relevant Service. If the Site Survey reveals that the Service is unavailable or additional costs (including costs arising from capital works, on-site cabling or wiring or building management charges) are required to deliver the Service, we may propose an amendment to the Service and the charges for the Service by notice to you. If you do not accept the amended Service or the amended charges, you may cancel the Service provided that you reimburse us any third party costs that we reasonably incur in relation to your termination of the impacted Service.

4 SERVICE PROVISIONING TIME

4.1 After we carry out the Site Survey, we will provide you with a target service delivery completion date for the Service (**RFS Date**).

4.2 If we do not deliver the Service to you by the RFS Date, other than as a result of an Exclusion Event, you may claim a credit of 5% of the non-recurring charges (**NRC**) (or monthly recurring charges (**MRC**) if no NRC is applicable) for the delayed Service for each Business Day past the RFS Date, up to a maximum credit of 100% of the NRC (or the first month's MRC) for the delayed Service.

4.3 If we do not deliver the Service to you within 31 days of the RFS Date other than as a result of an Exclusion Event, you may cancel the affected Service by notifying us in writing within 15 days of the expiry of the 31 day period.

4.4 We will provide you with a period of 2 Business Days from the date that we notify you that the Service is ready for testing (**Test Period**), to test the Service for any Provisioning Fault.

5 SERVICE AVAILABILITY TARGETS

5.1 We will aim to meet the following Service Availability targets based on the resilience design of the Service.

Table 1: Service Availability

Service Resilience Design			Service Availability Target	
Primary Access Type	Backup Access Type	PoP Resilience	PoP-to-PoP	Site-to-Site
Ethernet Access	N/A	Single PoP	99.99%	99.90%
Ethernet Access	Ethernet Access	Single PoP	99.99%	99.98%
Ethernet Access	Ethernet Access	Dual PoPs	99.999%	99.995%

If a Service does not meet the Service Availability target in a month, you may claim a credit calculated in accordance with Table 2.

Table 2: Service Availability Credits

Service Type	Availability calculated as a percentage	Credit
PoP-to-PoP	99.98%-99.86%	6% of Port MRC
	99.85%-99.45%	8% of Port MRC

	<99.45%	10% of Port MRC
Site-to-Site	99.90%-99.50%	3% of MRC
	99.50%-99.00%	5% of MRC
	<99.00%	7% of MRC

5.2   If a Service experiences either:

(a)   a single period of Unavailability in excess of 24 hours in any month; or
(b)   three or more periods of Unavailability of eight or more hours each in any six month period,

(either being a **Chronic Outage**), you may cancel the impacted Service without the payment of any Early Termination Charges by notifying us in writing within 15 days of the Chronic Outage.

6   MEAN TIME TO RESTORATION (MTTR)

6.1   We will aim to meet a MTTR target of less than four hours per month.

6.2   If the actual MTTR exceeds four hours for a month, you may claim the following credit:

Table 3: MTTR Credits

Mean Time to Restore	Credit
Between 241 minutes and 480 minutes	5% of MRC
Between 481 minutes and 960 minutes	7% of MRC
Between 961 minutes and 1440 minutes	10% of MRC
In excess of 24 hours	12% of MRC

6.3   The MTTR credits do not apply cumulatively. A MTTR credit may not be claimed in addition to any other credits for other service level targets with respect to the same incident or outage.

7   ROUND TRIP DELAY (RTD)

7.1   We will aim to meet the RTD targets applicable to your Service and notified to you.

7.2   If we exceed the RTD target by 20% for a particular VPLS class of service (**CoS**) in a month, you may claim a credit for the impacted Service calculated according to the following formula:

$$a \times \left(\frac{x}{y} \right) \text{ x } 10\%$$

where *"a"* is Port MRC, *"x"* is bandwidth of *affected subscribed CoS* on that Port, and *"y"* is total bandwidth of that Port.

8   FRAME DELIVERY RATIO (FDR)

8.1   We will aim to meet the monthly FDR targets set out in Table 4.

Table 4: FDR Targets

Targets (%)					
Voice CoS	Video CoS	Critical Data CoS	Interactive Data CoS	Standard Data CoS	Low Priority Data CoS
99.995%	99.99%	99.95%	99.95%	99.95%	99.9%

8.2   If we do not meet the FDR target for a particular CoS in a month, you may claim a credit for the impacted Service calculated according to the following formula:

$$a \times \left(\frac{x}{y} \right) \text{ x } 10\%$$

where *"a"* is Port MRC, *"x"* is bandwidth of *affected subscribed CoS* on that Port, and *"y"* is total bandwidth of that Port.

9   JITTER

9.1   The Jitter targets apply to the Voice CoS only. We will aim to meet a monthly average Jitter target of:

(a)   ≤ 35 milliseconds for South Africa;
(b)   ≤ 15 milliseconds for China, India; and
(c)   ≤ 5 milliseconds for all other locations.

9.2   If we do not meet the Jitter target, you may claim a credit for the impacted Service calculated according to the following formula:

$$a \times \left(\frac{x}{y} \right) \text{ x } 10\%$$

where *"a"* is Port MRC, *"x"* is bandwidth of *the Voice CoS* on that Port, and *"y"* is total bandwidth of that Port.

10   EARLY TERMINATION CHARGES

10.1   If you cancel a Service for any reason other than our material breach of this Agreement at any time:

(a)   prior to the Service Start Date for that Service, you must pay us an Early Termination Charge in the amount of the costs reasonably incurred by us as a result of the termination (including any reasonable amounts payable by us to our Service Provider as a result of the cancellation of the Service), which will not exceed an amount equal to 100% of MRC for Local Access and cross-connect multiplied by the number of months in the Initial Period;

(b)   during the Initial Period for that Service, you must pay us an Early Termination Charge equal to the applicable percentage of the MRC components as indicated in the below table multiplied by the number of months remaining in the Initial Period:

Table 5: Early Termination Charges

Initial Period	When you cancel the Service	Percentage of the MRC components
12 Months	Months 1-9	(1) 100% of MRC for Local Access and cross-connect; and (2) 30% of Port MRC, as set out in the applicable Service Order Form
	Months 10-12	(1) 100% of MRC for Local Access and cross-connect; and (2) 15% of Port MRC, as set out in the applicable Service Order Form
24 Months	Months 1-21	(1) 100% of MRC for Local Access and cross-connect; and (2) 30% of Port MRC, as set out in the applicable Service Order Form
	Months 22-24	(1) 100% of MRC for Local Access and cross-connect; and (2) 15% of Port MRC, as set out in the applicable Service Order Form
36 Months	Months 1-33	(1) 100% of MRC for Local Access and cross-connect; and (2) 30% of Port MRC, as set out in the applicable Service Order Form
	Months 34-36	(1) 100% of MRC for Local Access and cross-connect; and (2) 15% of Port MRC, as set out in the applicable Service Order Form

10.2   If you downgrade your Service, your MRC will be reduced for the remaining months in the Initial Period, but we may charge you for any costs reasonably incurred as a result of the downgrade (including any reasonable amounts

payable by us to our Service Provider as a result of the downgrade of the Service).

11   DEFINITIONS

11.1   In this Service Schedule, unless otherwise stated:

Frame Delivery Ratio (FDR) means the ratio of the number of test packets received at a destination provider edge router, compared with the number of test packets sent from an origin provider edge router at 5 minute intervals in a month. FDR only applies to the Service where the Port is on a provider edge router that is enabled with a performance monitoring device to measure traffic flow over our VPLS Network, as identified on the PoP List.

Jitter measures the average deviation in a month in the RTD for the Voice CoS. Jitter is measured between PoPs using sample test packets sent at 5 minute intervals between PE Routers enabled with a performance monitoring device to measure the traffic flow over our VPLS Network, as identified on PoP List.

Local Access or Local Loop means the domestic connecting carriage service providing a direct connection between a PoP in a country and your Site in that country.

Mean Time to Restore (**MTTR**) means the sum of the time the Service is Unavailable during a month divided by the total number of Service outages in that month. Each occasion on which the relevant Service is Unavailable is counted as one outage.

MRC means the monthly recurring charge payable for the Service or a component of the Service for a relevant calendar month.

Network means a system or series of systems that carries, or is capable of carrying communications by means of guided or unguided electromagnetic or optical energy.

PoP means a point of presence housing access nodes which connect to the Telstra international backbone network used by us to carry the Service between PoPs in different countries around the world.

PoP-to-PoP means a point-to-point or point-to-multipoint Service provisioned between PoPs without a Local Access.

Provisioning Fault means the failure of the Service to meet the relevant ITU specifications for establishing that Service.

Round Trip Delay (RTD) is measure of the monthly average round trip delay performance for each Service and is measured separately between our PoPs for each type of CoS between PE Routers enabled with a performance monitoring device to measure the traffic flow over our VPLS Network, as identified on PoP List.

Site-to-Site means a Service provisioned between your Sites which is connected to our PoPs via Local Access circuits.

ANNEX - OPTIONAL SERVICE FEATURES

1   OPTIONAL SERVICE FEATURES

1.1   You may request us to supply the following optional services:

(a)   Unmanaged Internet Access (**UIA**); and

(b)   Burstable Bandwidth,

(**Optional Service Features**).

1.2   To access the Optional Service Features, you may need to separately acquire additional services such as our Global Internet Direct (**GID**) Service. The terms relating to the supply of those additional services are set out in separate Service Schedules and Service Order Forms.

1.3   You are responsible for the configuration and the security of your equipment which is connected to the Optional Service Features.

2   UIA

2.1   Our UIA Service allows you to:

(a)   use a VLAN-mode VPLS to connect to a GID port and a VPLS Port on the same Local Access.

(b)   use a transparent-mode VPLS to connect to a GID port using the same VPLS Port(s).

2.2   You will specify in your Order Form the amount of dedicated bandwidth for your VLAN-mode VPLS and your GID service.

2.3   For a transparent–mode VPLS, bandwidth specified in the Order Form will be shared by your VPLS and GID service.

2.4   Your combined VPLS and GID service traffic must not exceed the total bandwidth of the VPLS Port.

2.5   Our VPLS service level targets apply only to the VPLS. The service levels applicable to the GID are set out in the relevant GID Service Schedule.

3   BURSTABLE BANDWIDTH

Introduction

3.1   Our Burstable Bandwidth Service allows you to use additional VPLS network bandwidth above your Committed Data Rate up to a maximum amount of VPLS network bandwidth (**Maximum Data Rate**), as specified by you in your Order Form.

3.2   If you do not specify a Maximum Data Rate, the default ratio of 2:1 (Maximum Data Rate: Committed Data Rate) will apply.

3.3   You may only request a variation to each of your Committed Data Rate and Maximum Data Rate once each month. The variation will take effect in the next calendar month.

3.4   We do not promise to deliver your VPLS traffic in excess of your Committed Data Rate. We will not deliver your VPLS traffic in excess of your Maximum Data Rate.

How we measure and charge your bandwidth

3.5   Your standard MRC will apply to your bandwidth usage up to your Committed Data Rate. Additional variable charges will apply to your bandwidth usage in excess of your Committed Data Rate and up to your Maximum Data Rate.

3.6   We will measure your bandwidth usage in five minute intervals, on all your incoming and outgoing VLPS traffic through each Port for the purpose of calculating your chargeable bandwidth for the option that you select below:

(a)   **95th Percentile** – we use the higher of your incoming and outgoing VPLS traffic and charge a specified rate to your bandwidth usage in excess of your Committed Data Rate after excluding the top 5% of your monthly traffic when arranged from highest to lowest;

(b)   **90th Percentile** – we use the higher of your incoming and outgoing VPLS traffic and charge a specified rate to your bandwidth usage in excess of your Committed Data Rate after excluding the top 10% of your monthly traffic when arranged from highest to lowest; or

(c)   **Average Rate** – we will charge a specified rate to the simple average of your bandwidth usage in excess of your Committed Data Rate.

Service levels

3.7   Our service levels only apply to your Committed Data Rate and not to your bandwidth usage in a particular month that exceeds your Committed Data Rate.