SERVICE SCHEDULE - PROVIDER BACKBONE ETHERNET VIRTUAL CONNECTION (PB-EVC)

NUCLEUS CONNECT PTE. LTD.

INTERCONNECTION OFFER (ICO) AGREEMENT

SERVICE SCHEDULE – PROVIDER BACKBONE ETHERNET VIRTUAL CONNECTION (PB-EVC)

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1. INTRODUCTION

- 1.1 This Service Schedule sets out the terms and conditions under which Nucleus Connect will provide the service known as PB-EVC (as defined below) to the Contracting QP.
- 1.2 This Service Schedule comprises the following:
 - (a) the provisions herein;
 - (b) subject to paragraph 6, the General Service Terms and Conditions and the following Appendices:
 - (i) Appendix 1: Provisioning Timeframe;
 - (ii) Appendix 2: Service Level Guarantees; and
 - (c) Orders submitted by the Contracting QP in relation to this Service Schedule.
- 1.3 In the event of any inconsistency or conflict between the provisions herein, the General Service Terms and Conditions and Orders submitted by the Contracting QP in relation to this Service Schedule, the order of precedence shall be as follows:
 - (a) the provisions herein;
 - (b) Orders submitted by the Contracting QP in relation to this Service Schedule; and
 - (c) the General Service Terms and Conditions.
- 1.4 The Master ICO Agreement, including the Annexes, shall apply unless and to the extent amended or supplemented by the provisions of this Service Schedule.
- 1.5 In this Service Schedule, a reference to a paragraph, unless stated otherwise, is to a paragraph of this Service Schedule.

2. DEFINITIONS AND INTERPRETATION

- 2.1 Unless otherwise defined herein this Service Schedule, all terms and expressions used herein will be construed to have the same meanings as found in the Master ICO Agreement and the General Service Terms and Conditions. Where a term or expression is defined specifically in this Service Schedule herein, the provisions herein shall prevail.
- 2.2 In this Service Schedule:

Class of means any of the following class of service:

Service or CoS

- (a) Class A Real Time (Class A);
- (b) Class B Near Real Time (Class B);
- (c) Class C Mission Critical (Class C); or
- (d) Class D Best Effort (Class D),

each of which is prescribed QoS parameters as set out in the table in paragraph 4.2(c);

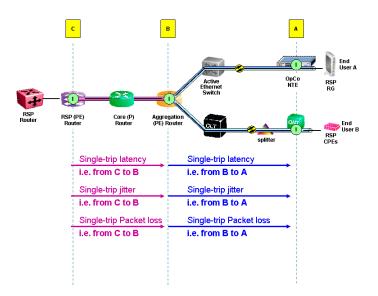
Committed Information Rate (CIR) means the minimum bandwidth that Nucleus Connect guarantees over the B-C segment of the diagram in the definition of "QoS" for each PB-EVC:

Downlink

means bandwidth in the downstream direction (from the Core Network to the Aggregation Network); Latency

means the one-way delay in packet delivery as a result of physical distance, and the Active Network components from the Aggregation to the Core Layer;

Quality of Service or (QoS) means the service levels committed for ensuring delivery of services over the B-C segment of the diagram below, measured by Jitter, Latency and Packet Loss as set out in the table in paragraph 4.2 (c);



Service Port

means the physical port which the Contracting QP's or End-User's equipment shall interface to the Nucleus Connect Active Network either at Core or Aggregation Layer for the purpose of multiplexing Ethernet Virtual Connections;

Service Port ID

means an identification number assigned by Nucleus Connect to a QP-EVPL Service Port that has been provisioned for the Contracting QP;

Symmetrical

means equal bandwidth for Uplink and Downlink (between the Core and the Aggregation Network); and

Uplink

means bandwidth in the upstream direction (from the Aggregation Network to the Core Network).

3. COMMENCEMENT

This Service Schedule shall commence with effect from the date that the Contracting QP first places an Order to take up a PB-EVC, in accordance with the General Service Terms and Conditions.

4. SERVICE REQUIRMENTS

4.1 The Contracting QP shall place one (1) Order for each PB-EVC. For example, if the Contracting QP wishes to take up two (2) PB-EVCs, the Contracting QP shall submit two (2) separate Orders.

- 4.2 When placing an Order for a PB-EVC, the Contracting QP shall be required to:
 - (a) Specify one (1) Service Port ID of the QP-EVPL Service Port and the NetLink Trust CO within Nucleus Connect's Aggregation Network. The QP-EVPL Service Port must be located at NC CO.
 - (b) Specify the following Network protocol options:
 - (i) Layer 2 VLAN (IEEE 802.1q and IEEE Q-in-Q);
 - (ii) either IPv4 or IPv6; and
 - (iii) either static routing or dynamic routing,

provided that the availability of sub-paragraphs (ii) and (iii) above are subject to the Contracting QP having taken up and completed the L3 Virtual Routing Domain Setup Service, which is an Ancillary Mandated Service provided by Nucleus Connect.

The Contracting QP can order multiple PB-EVCs from the same NetLink Trust CO to same or different NC CO(s). The routing of traffic for the PB-EVCs will be based on the above Network protocol chosen by the Contracting QP.

- (c) Subscribe to only one (1) Class of Service for such PB-EVC and indicate the Symmetrical CIR it wishes to purchase in blocks of 250Mbps, provided that:
 - (i) the minimum Symmetrical CIR for such Class of Service shall be 250Mbps; and
 - (ii) the maximum Symmetrical CIR for such Class of Service shall be 10Gbps.

The Contracting QP may subsequently from time to time, increase or decrease the Symmetrical CIR of the Class of Service subscribed for such PB-EVC, in blocks of 250Mbps, provided that sub-paragraphs (i) and (ii) above are complied with. Such increase or decrease of Symmetrical CIR shall constitute a Modification for which the Contracting QP shall be required to submit an Order pursuant to and in accordance with the General Service Terms and Conditions.

The tables below show the performance parameters of each Class of Service. For the avoidance of doubt, only one (1) Class of Service is supported per PB-EVC.

Class Of Service	Jitter	Latency	Packet Loss
Class A Real Time	0.5ms	1ms	0.1%
Class B Near Real Time	0.5ms	3ms	0.1%
Class C Mission Critical	2ms	5ms	0.05%
Class D Best Effort	Best Effort	10ms	Best Effort

(d) Specify whether it requires to have multiple services (C-VLAN) within the same PB-EVC. If so, the Contracting QP shall also specify the bandwidth allocation for each C-VLAN, which shall be in blocks of 1Mbps.

- 4.3 If the Contracting QP injects traffic into any PB-EVC which exceeds the Symmetrical CIR purchased for such PB-EVC pursuant to paragraph 4.2(c), the excess traffic will not be delivered.
- 4.4 The Contracting QP must adhere to Nucleus Connect's QoS tagging scheme when sending or receiving data traffic through any PB-EVC from the relevant Service Port(s). Such QoS tagging scheme requires the use of priority bit value 5 for Class A, priority bit value 4 for Class B, priority bit value 2 for Class C and priority bit value 1 for Class D.

5. CHARGES

The charges set out in this paragraph 5 are the rates payable by the Contracting QP on a per PB-EVC basis.

5.1 <u>Monthly Recurring NC Charges</u>

Nucleus Connect will commence charging the Contracting QP the Monthly Recurring NC Charges specified below on the RFS Date.

PB-EVC		Committed Information Rate Monthly Recurring NC Charge (per 250Mbps)		
	Real Time	\$1,700		
Class of	Near Real Time	\$1,450		
Service	Mission Critical	\$1,125		
	Best Effort	\$875		

5.2 One-Time Charges

The charges set out below are non-refundable once they are imposed on the Contracting QP by Nucleus Connect in the manner specified below. In addition, depending on when the relevant action is preferred by the Contracting QP to be undertaken by Nucleus Connect, the following multiplier factor will be applied to the NC Charges set out below. For the avoidance of doubt, the multiplier factor to be applied shall be one (1) unless the Contracting QP requests that the relevant action be undertaken by Nucleus Connect on off-working hours during Business Day(s) or on non Business Day(s).

	Period		Multiplier Factor	
Business	Monday to Friday	Working Hours	9.00am to 5.00pm	1
Day	Monday to Friday	Off-working hours	Before 9am and after 5.00pm	1.5
Non- Business day	Saturday, Sundays and Public Holidays		Throughout	2

(a) Cancellation Charge

Upon any Cancellation of an Order relating to PB-EVC by the Contracting QP, the following Charges shall be imposed on the Contracting QP:

- an NC Charge of \$50 if Cancellation happens before Nucleus Connect's acknowledgement of its receipt of the Order or an NC Charge of an amount equal to the applicable NC Charges as set out in paragraph 5.2 if Cancellation happens after Nucleus Connect's acknowledgement of its receipt of the Order;
- (ii) NLT Charges, except those NLT Charges which would be subject to paragraph 5.2(a)(iv), which have been incurred by Nucleus Connect, or which Nucleus Connect has committed to incur, at the time of such Cancellation;
- (iii) any Third Party Charges which have been incurred by Nucleus Connect, or which Nucleus Connect has committed to incur, at the time of such Cancellation; and
- (iv) any other third party charges, NetLink Trust's charges and/or NLT Charges agreed pursuant to paragraph 5.2 or 6.3 of the General Service Terms and Conditions which have been incurred by Nucleus Connect, or which Nucleus Connect has committed to incur, at the time of such Cancellation.

(b) <u>Installation Charge</u>

Upon the installation of a PB-EVC by Nucleus Connect, a one-time NC Charge of \$1,500 shall be imposed on the Contracting QP on a per PB-EVC basis.

(c) <u>Modification Charge</u>

A NC Charge of \$200 shall be imposed on the Contracting QP upon the submission of a Modification Order by the Contracting QP.

(d) Maintenance or Repair

- (i) Nucleus Connect will charge for every onsite visit or joint investigation requested by the Contracting QP, according to the length of time spent by Nucleus Connect's representative during such onsite visit or joint investigation respectively, if such onsite visit or joint investigation is requested by the Contracting QP. There will be a minimum charge of \$800 per onsite visit or joint investigation (as the case may be) up to the first two hours. Subsequent hour blocks are charged at \$400 per hour.
- (ii) The No Fault Found Charge referred to in the General Service Terms and Conditions is \$214 per Fault report.

(e) Disconnection

Upon a disconnection of a PB-EVC by reason of suspension pursuant to the ICO Agreement, a NC Charge of \$150 shall be imposed on the Contracting QP.

(f) Deactivation

Upon the Deactivation of a PB-EVC, the following Charges shall be imposed on the Contracting QP.

(i) the following NC Charges

Description	Charges
Deactivation Charge	\$150
Early Termination Charge	100% of remaining contract value

- (ii) NLT Charges, except those NLT Charges which would be subject to paragraph 5.2(f)(iv), which have been incurred by Nucleus Connect, or which Nucleus Connect has committed to incur, at the time of such Deactivation;
- (iii) any Third Party Charges which have been incurred by Nucleus Connect, or which Nucleus Connect has committed to incur, at the time of such Deactivation; and
- (iv) any other third party charges, NetLink Trust's charges and/or NLT Charges agreed pursuant to paragraph 5.2 or 6.3 of the General Service Terms and Conditions which have been incurred by Nucleus Connect, or which Nucleus Connect has committed to incur, at the time of such Deactivation.

6. CHANGES FROM THE GENERAL SERVICE TERMS AND CONDITIONS

6.1 Paragraph 9.10 of the General Service Terms and Conditions

The tables in paragraph 9.10 of the General Service Terms and Conditions shall be deleted in their entirety and replaced with the following table:

Specific MTTR per Month	Reduction in Monthly Recurring Charge per affected circuit
≤ 3 hours	No Compensation
> 3 hours but ≤ 5 hours	10%
> 5 hours but ≤ 10 hours	20%
> 10 hours	30%

Application FormProvider Backbone Ethernet Virtual Connection Service (PB-EVC)



ATTN: NUCLEUS CONNECT, ORDER DESK FACSIMILE NO.: (65) 6808 2820 EMAIL: orderdesk@nucleusconnect.com

Business Customer Information					
Compa	iny Details	Authorised Officer Particulars			
Name of Firm/Company as in RCB:		Name of Authorised Officer as in NRIC/PASSPORT/FIN*. Please underline surname. (Dr/Mr/Miss/Mrs/Mdm):			
Registered Address as in RCB:		NRIC/PASSPORT/FIN* No. of Authorised Officer (Dr/Mr/Miss/Mrs/Mdm):			
		E-mail of Authorized Officer:			
Main Office Contact No.:		Designation:			
Main Office Fax No.:		Contact No. (Office):			
Business Registration Number (BRN)	:	Contact No. (Fax):			
Account Information (For New Accounts, please refer to wign up Nucleus Connect's Services)	ww.nucleusconnect.com for instruction to	☐ Account Number:			
Customer Reference ID : (This ID is issued by customer for the set out in this application form)	ir internal reference of the service that is				
	Billing Details (If different from	Business Customer Information)			
Company Name:		Billing Address:			
City & Postal Code:		Country:			
Contact Person Name (Billing):		Customer Contact Number :			
Customer Fax Number:		E-mail:			
* Please select where appropriate					
	Customer Te	chnical Contact			
Installation Contac	t (for service delivery)	Operations/Technical Contact (after service delivery)			
Name:		Name:			
Telephone (O):		Telephone (O):			
Mobile:		Mobile:			
Email:		Email:			
Notification Mode: 24 Hours Daily	Office Hours (9am-5pm, Mon-Fri)	Notification Mode: 24 Hours Daily Office Hours (9am-5pm, Mon-Fri)			
Instruction					
(1)Total subscribed bandwidth must be in blocks of 250Mbps; (2)Multiple services (VLAN) within the same PB-EVC can be allocated bandwidth in block(s) of 1Mbps; (3)Only one Class of Service Per PB-EVC; (4)QP must complete the L3 Virtual Routing Domain Setup Service if Layer3 IP V4 or IP V6 is selected.					
PB-EVC Configuration					
Type of Order	☐ New ☐ Modification ☐ Deactiv	ation			
Network protocol options		N IEEE q-in-q ☐ Layer 3 IPV4 ☐ Layer 3 IPV6			
Class Of Service		(Near Real Time)			
Total CIR Bandwidth subscribed	Bandwidth:				
Service Destinations	QP-EVPL Service Port ID:	☐ Aggregation Layer CO:			

Application FormProvider Backbone Ethernet Virtual Connection Service (PB-EVC)



Layer 2 Information (VLAN Bandwidth allocation)						
Bandwidth: Bandwidth: VLAN:			Bandwidth: VLAN:		Bandwidth: VLAN:	
Bandwidth: Bandwidth: VLAN:		Bandwidth: 			Bandwidth: VLAN:	
		Layer 3 Rout	ing Information			
		on -BGP Configuration ent if more space is needed)		:	Static Routing information	
☐ Virtual Routing Domain ID: Bandwidth: VLAN: ☐ BGP ASN: ☐ MD5 Password:		☐ Prefix1: ☐ Prefix2: ☐ Prefix3: ☐ Prefix4: ☐ Additional Attachment:		☐ Virtual Routing Domain ID: Bandwidth: VLAN: ☐ IP Routes1: IP Routes2: ☐ IP Routes3: Additional Attachment:		
☐ Virtual Routing Domain ID: Bandwidth: VLAN: BGP ASN: MD5 Password:		☐ Prefix1:		□ Virtual Routing Domain ID: □ Bandwidth: VLAN: □ IP Routes1: □ IP Routes2: □ IP Routes3: □ Additional Attachment:		
		Contra	ct Period			
Minimum Term [®]	12 months	☐ Others (Please spe	ecify):			
Customer requested RFS date^						
		Additional	Information			
^ Subject to agreement, resource availability and confirmation by Nucleus Connect.						
If Minimum Term is not specified, th	e Contracting QF	shall be deemed to have s	selected 12 months.			
		Custome	r Signature			
We hereby agree to subscribe to the abovementioned services on the terms and subject to the conditions contained in the Master ICO Agreement and the Service Schedule for the abovementioned services, which terms and conditions shall apply upon Nucleus Connect's acceptance of this application. We certify that all information provided by us herein are true, correct and complete. Further, we agree that any cancellation of the abovementioned services may result in a charge to us at Nucleus Connect's prevailing rates.						
Signature of Authorised Officer		Date		Company Stamp		
For Nucleus Connect Use						
Application Rejected:		Reason for rejection:				
Application Accepted		Service ID/s:		Work Orde	er No.:	
No. of pages attached (Excluding application forms):		Approval code:		Processed	by (Name, Contact, Signature and Date)	