

SCHEDULE 6.2 - SERVICE DESCRIPTION
WHOLESALE DATA CONNECTION SERVICE (WDC)

1. THE SERVICE

- 1.1 The Wholesale Data Connection (**WDC**) Service provides symmetric, synchronous, dedicated and uncontended data connectivity within the Kingdom of Bahrain between:
- (a) two of the Access Seeker's Points of Presence; or
 - (b) an Access Seeker's Point of Presence and its End User Premises; or
 - (c) an Access Seeker's Point of Presence and the Point of Presence of another Licensed Operator; or
 - (d) Point to point between two End User Premises of the same Access Seeker with an additional 50% premium charge on the MRC of the requested WDC bandwidth.
- 1.2 The WDC Service can only be used with an Access Provider Customer Premises Equipment at either the Access Seeker's Point of Presence or End User Premises.
- 1.3 The WDC Service is provided with a number of options. These are specified in Annex 1 of this Service Description.
- 1.4 The WDC Service provides the following service characteristics:
- (a) Round Trip Delay (Frame Transfer Delay): 2ms
 - (b) Jitter (Frame Delay Variations): 1ms
 - (c) Frame Loss Ratio: 0%
- 1.5 The service characteristics set out at paragraph 1.4 above are tested as part of the acceptance criteria during the testing validation of a new WDC Service. The parties agree that these service characteristics are not continuously or repeatedly monitored and/or tested once the WDC Service commissioned and in service.

2. DEFINITIONS

Aggregation Link means the connectivity established between a Point of Presence of the Access Seeker and an Access Provider access node, as further detailed in Annex 2 and Annex 3 of this Service Description.

Connection means an individual WDC Service as described in paragraph 1.1.

Customer Premises Equipment or CPE means the Equipment more particularly specified under Annex 2 (Technical Characteristics) of this Service Description.

JUMBO frame means an Ethernet frame with a payload greater than the standard MTU of 1,500 bytes.

Minimum Service Period means an applicable minimum period of twelve (12) calendar months for which the WDC Service shall be provided, such period commencing from the Service Commencement Date except for a WDC Service subject to Temporary Service Period(s).

MTU means a Maximum Transmission Unit.

Point of Presence means a permanent physical location where an aggregation link or connection of a relevant Service is terminated at premises owned or leased by the Access Seeker or at the Access Provider's colocation facility, but for the avoidance of doubt cannot be an earth station, manhole, power room, lead-in pipe, duct, outdoor cabinet, MDF, riser room or anywhere not on the main island of Bahrain unless connected by a permanent physical connection above sea level and accessible the Access Provider.

Project means a mutually agreed project plan and delivery schedule for fifteen (15) or more WDC Connections, which are subject to an agreed project plan and delivery schedule, including but not limited

to specific service levels, as agreed between the Access Seeker and the Access Provider. For the avoidance of doubt, an Access Seeker is not required to opt for a Project and the Service Levels set out in Schedule 7 shall continue to apply.

Relocation means geographically shifting a WDC Service from at least one permanent physical location to another where: (i) the identity of the End User remains the same for the scenario set out at paragraphs 1.1(b) and 1.1(d) above; and (ii) the identity of the Licensed Operator remains the same for the scenario set out at paragraph 1.1(c) above.

Renewed Minimum Service Period means an applicable minimum period of one (1) calendar month for which the WDC Service shall be provided, such period commencing from the expiry of a Service Period.

Service Period means the Minimum Service Period or Renewed Minimum Service Period.

Temporary Service Period means a period of a minimum one (1) week and a maximum three (3) months for which a WDC Service or WDC Amended Service is requested.

WDC Amended Service means a WDC Service that is amended by a Change Request.

WDC Operations Manual means Annex 6 of this Schedule 6.2.

3. Supply of Service

- 3.1 A WDC Service shall be requested by the Access Seeker in the manner and according to the process set out in Annex 6 of this Schedule 6.2 – the WDC Operations Manual.
- 3.2 Subject to any Project agreed between the Access Seeker and the Access Provider, the Service Level Terms shall apply to:
 - (a) New Connection - provide a new WDC Service as requested by the Access Seeker;
 - (b) Upgrade or Downgrade;
 - (c) Reconfiguration - reconfigure technical parameters of an existing Connection; and
 - (d) Cancellation - the Access Seeker requests the cessation of an existing Connection.
- 3.3 Where an Access Seeker deploys multicasts in the Access Seeker's core Network, the Access Seeker shall be able to use the WDC Service to pass multicast traffic over the Access Provider's Network transparently.
- 3.4 The WDC Service shall support MTU and JUMBO frames. Where required by an Access Seeker, the WDC Service shall support 1,700 byte frames.
- 3.5 The Access Provider shall provide access to an online tool that identifies up-to-date accurate digital coverage maps for the areas in the Kingdom of Bahrain covered by the WDC Service and the maximum speed supported for each block (or as another unit as may be introduced by the Access Provider at any point in time) to ensure that the right service is offered by the Access Seeker to the End User. This online tool should be updated at least on a monthly basis. The Access Seeker may not resell the WDC Service or any part thereof (whether logically or physically) to another Licensed Operator.

Temporary Service Period

- 3.6 The Access Seeker may request the Access Provider to provide a WDC Service or WDC Amended Service for a Temporary Service Period ('**Temporary WDC Service**'). The Access Provider shall provide the Access Provider with sufficient technical detail to allow the Access Provider to review such request.
- 3.7 The Access Provider may reject a Temporary WDC Service if, the Temporary WDC is not operationally, economically or technically feasible. The Access Provider reserves the right to

reject the Temporary WDC Service if its duct network and/or civil infrastructure does not extend to the location where the Temporary WDC Service is being requested for.

- 3.8 Where the Access Provider agrees to provide a Temporary WDC Service, the parties agree that such Temporary WDC shall be subject to the charges set out in Schedule 3 – (Pricing).
- 3.9 The Access Seeker may request a renewal of the Temporary WDC for one or more Temporary Service Period(s) and agrees that such renewal shall be subject to the same charging mechanism as set out in paragraph 3.8 above. The Access Provider may reject a renewal of a Temporary WDC if it considers that such renewal is not operationally, economically, or technically feasible.
- 3.10 Where the Access Provider receives multiple requests from multiple Licensed Operators for Temporary WDC Services and where such Temporary WDC Services are to be deployed in the same area, during the same time period and for the same event, the Access Provider shall publish its proposal for the aforementioned event and make such proposal available to all eligible Licensed Operators on a non-discriminatory basis.

General Provisions

- 3.11 Withdrawal of a speed as a result of any amendment to this Service Description approved by the Regulator will not affect the unexpired portion of any Service Period of a WDC Service unless the Access Provider is willing to Upgrade the product for the same Charge.
- 3.12 The technical specifications of the WDC Service and protection options available for the WDC Service to Access Seekers are set out in Annex 1 and Annex 2 to this Service Description.
- 3.13 Upon request from an Access Seeker and where other ingress ports are available on the Customer Premises Equipment, the Access Provider shall allow an Access Seeker to ingress its traffic for the same WDC Connection the Customer Premises Equipment was provided for on the other ingress ports of the Customer Premises Equipment (free of charge) provided for a WDC Connection or WDC Aggregation Link.
- 3.14 The Access Provider shall provide to the Access Seeker a monitoring tool, which shall enable the Access Seeker to monitor the WDC Service against the following minimum parameters and other monitoring parameters in accordance with the technical parameters defined in the Joint Working Manual. This monitoring tool shall provide monitoring facilities 24 hours a day, 7 days a week, 365 days a year. The minimum parameters shall include:
 - (a) Link availability;
 - (b) Bandwidth Utilisation;

Amendment to the WDC Service

- 3.15 The Access Seeker shall be entitled to amend a WDC Service by requesting a WDC Amended Service in the manner and according to the process set out in Annex 6 of this Schedule 6.2 – the WDC Operations Manual.
- 3.16 The Access Seeker shall not be liable for any termination or additional recurring charges in respect of a request for a WDC Amended Service which is for a relocation. The Access Provider shall charge a once off charge in accordance with Schedule 3 - (Pricing) of the Reference Offer for the relocation unless the Access Seeker requires both Connections to be operational in parallel. The Access Provider shall not terminate the Connection which is subject to relocation until the Service Commencement Date of the new Connection.

Access Seeker Obligations

- 3.17 This Schedule 6.2, and more generally the Reference Offer, does not create any obligation nor any legal relationship between Access Provider and the Access Seeker's End User. This

Schedule 6.2, and more generally the Reference Offer, does not provide, grant or confer any right, benefit or privilege on any of the Access Seeker's End User against the Access Provider.

- 3.18 The Access Seeker shall provide the Access Provider with suitable space for, and access during Working Hours to, any Access Provider Equipment required to be located in any building in which the WDC Service is located within the control of the Access Seeker. If consent is required from a third party, such as the building owner, the Access Seeker shall procure such consent. The Access Provider is not required to pay the Access Seeker for the preparation or use of, or access to, space provided pursuant to this sub-paragraph.
- 3.19 Where an End User Premises is a VIP location in the Kingdom of Bahrain which is not subject to the exemption under the Law, the Access Seeker may request use of the Access Provider VIP team (free of any additional charge), if the Access Seeker can provide to the Access Provider a written valid official justification for the need for such services from the Regulator or an equivalent authority. On or before receipt by the Access Provider of the written valid official justification, the Service Request shall be suspended pending receipt of a written confirmation of the approval or if is not received within thirty (30) days of the Service Request, a cancellation.
- 3.20 If the Access Provider's Equipment requires electricity supply and electricity connection points, they shall be supplied, in the location specified by the Access Provider, by the Access Seeker at the Access Seeker's expense according to the equipment specification. Such electricity shall be available at the same level of supply, protection and continuity as that available to the Access Seeker's or End User's Equipment, as appropriate.
- 3.21 The Access Seeker shall be solely responsible for any loss, theft or destruction of, or damage (reasonable wear and tear excepted) to the Access Provider's Equipment required to be located in the building where the WDC Service is provided and which is within the control of the Access Seeker or End User, occurring any time and howsoever caused (unless caused by the Access Provider or its agents).
- 3.22 The Access Seeker shall provide the Access Provider and any authorised employee, agent, affiliate or contractor of the Access Provider with all information and assistance that person may reasonably require to design, test, commission and maintain the WDC Service (which may include participation in testing procedures as and when reasonably requested by the Access Provider).
- 3.23 The Access Seeker may require their agent to be present during the installation, testing or commissioning done by the Access Provider but not so as to affect the Service Commencement Date.

Variation or Withdrawal

- 3.24 The Access Provider may upon providing three (3) months' written notice to the Access Seeker and subject to the approval of the Regulator, vary the WDC Service or withdraw the WDC Service relating to the terms and Annexes in this Service Description, by issuing a revised Service Description.
- 3.25 Notwithstanding paragraph 3.24 above, unless the Access Provider and Access Seeker agree otherwise at the time, any withdrawal or variation of the WDC Service, or any amendment to the Charges payable for the WDC Service in accordance with this Service Description and Schedule 3 – (Pricing) of the Reference Offer, shall also apply to existing WDC Services provided under the Supply Terms, which shall continue in force in accordance with its terms and conditions until renewed or terminated in accordance with this Service Description or the Supply Terms.

Maintenance and support

- 3.26 The Access Provider shall provide maintenance and support services in respect of the WDC Service in accordance with the Schedule 7 – (Service Levels) of the Reference Offer.

Protection

- 3.27 The Access Provider shall provide default logical protection for the WDC Aggregation Link at no charge.
- 3.28 The Access Seeker may procure a full geo-redundant link as protection. The geo-redundant link is considered as a separate WDC Connection and charged at the applicable MRC as set out in Schedule 3 of the Reference Offer.
- 3.29 For the avoidance of doubt, the protection at the core network level is not charged to the Access Seeker and is only provided for information purposes and may be changed at the Access Provider's sole discretion.
- 3.30 The provision of the full geo-redundant link as protection is subject to availability, feasibility study and subject to the Access Seeker obtaining any relevant approval, including but not limited to access approvals, from the End User, any relevant landlords and/or Government authority as long as the Access Provider made all reasonable efforts to obtain them, including making the relevant applications in a timely manner, notifying the Access Seeker of such requirement and keeping the Access Seeker updated on the progress.
- 3.31 During the provisioning of a WDC Connection for which a full geo-redundant link as protection is required, the Access Provider shall provide the Access Seeker with the technical details regarding the protection solution, including the following:
- (a) the service configuration;
 - (b) the relevant acceptance tests for both the primary and secondary end-to-end WDC Connections at RFS (after provisioning).
- 3.32 If the Access Seeker has more than one WDC Aggregation Link and requires a WDC Aggregation Link with protection, the Access Seeker should indicate for such WDC Connection:
- (a) the WDC Aggregation Link that will be the primary Aggregation Link;
 - (b) the WDC Aggregation Link that will be the secondary Aggregation Link (in stand-by mode); and
 - (c) the capacity that should be reserved on the secondary WDC Aggregation Link. This capacity will be guaranteed in case of failure of the primary WDC Connection.

4. CHARGES

- 4.1 The Access Seeker shall pay to the Access Provider the relevant Charges determined in accordance with Schedule 3 – (Pricing) of the Reference Offer.
- 4.2 All Charges and sums due from one party to the other under this Agreement are exclusive of VAT. Any VAT shall be charged in accordance with the relevant regulation in force at the time of making the taxable supply and shall be paid by the paying party following receipt from the billing party of a valid VAT invoice.

5. SERVICE LEVELS

- 5.1 The Access Provider shall provide the WDC Service in accordance with the Service Levels specified in Schedule 7 – (Service Levels) of the Reference Offer.

ANNEX 1

CIRCUIT SPEEDS, DEFINED INTERFACES, MEDIA AND TOPOLOGY

Service element	Speed	Interface	Connector	Topology	Access
Connection terminating at End-User Premises or Point of Presence	64 Kbit/s to 1000 Mbit/s, STM1	Gigabit Ethernet 1000BASE-LX Gigabit Ethernet 1000BASE-SX, SDH	SC/LC	Ethernet service point-to-point/ Synchronous Digital Hierarchy (SDH)	Fibre
	1.25 Gbit/s to 10 Gbit/s, STM4, STM16, STM64	10GE:10G BASE –SR, 10G BASE LR, 10G BASE –ZR,10GE LAN, 10GE WAN, SDH			
	25 Gbit/s	25 GE	SC/LC	Ethernet service point-to-point	
	50 Gbit/s	50 GE			
	100 Gbit/s	100 GE/OTU4			
Aggregation Link terminating at the Point of Presence of the Access Seeker	1 and 10 Gbit/s	Gigabit Ethernet 1000BASE-LX Gigabit Ethernet 1000BASE-SX	SC/LC	Ethernet service point-to-point	Fibre
Aggregation Link terminating at the Point of Presence of the Access Seeker	100 Gbit/s	Ethernet	SC/LC	Ethernet service point-to-point	Fibre

*SDH speeds, interfaces and topology are strictly limited to existing circuits or circuits that are currently on the Access Seeker's own infrastructure and subject to a service migration to BNET's network following an asset transfer exercise.

ANNEX 2

TECHNICAL CHARACTERISTICS

Service Type	Service Attribute	
Ethernet service point-to-point or Ethernet service point-to-multipoint (Pseudowire Ethernet tagged mode with port-based aggregation or virtual aggregation) providing guaranteed symmetrical bandwidth	Interface	Optical Access: 1. GE:1000BASE-SX , 1000BASE –LX. 2. 10GE:10G BASE –SR, 10G BASE LR, 10G BASE –ZR,10GE LAN, 10GE WAN. 3. OTU2/OTU2e/OTU4. 4. STM1, STM4, STM16, STM64
	Connector	Fibre Access: SC/Single mode LC
	Speed	Please refer to Annex 1
	Mode	Duplex
	MAC Layer Supported	Yes
	MAC Address Learning	Yes
	Frame Size	Fibre: Min 1518, Max 9600 (Jumbo Frame), default 1700
	Class of Service	100% Real-Time. No Over Utilisation
	Maximum Number of CE-VLANs	4096
	CE-VLAN – PE-VLAN ID Map	Multiple VLAN per Connection
	CE-VLAN ID Preservation	Yes
	CE-VLAN COS Preservation	Yes
	Unicats Traffic Limit	None (Copper) / Yes (Fibre)
	Multicast Traffic Limit	None (Copper) / Yes (Fibre)
	Broadcast Traffic Limit	None (Copper) / Yes (Fibre)
	Protocol Treatment	Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSP) Pause (802.3x) Link Aggregation Protocol (LACP) (802.1AG),(802.1Q),(802.1D), (802.1P) Marker Protocol All LAN Bridge Management Group Block of Protocols Generic Attribute Registration Protocol (GARP) Block of Protocol Cisco Delivery Protocol (CDP) Cisco VLAN Trunking Protocol (VTP) OAM CM/Y1731 PDUs
	Quality of Service	Round Trip Delay (Frame Transfer Delay): 2 ms Jitter (Frame Delay Variations): 1 ms Frame Loss Ratio: 0%

*SDH speeds, interfaces and topology are strictly limited to existing circuits or circuits that are currently on the Access Seeker's own infrastructure and subject to a service migration to BNET's network following an asset transfer exercise.

The Access Provider shall include multiple CPE options, to include CPE options which are available from alternative vendors. The Access Provider must apply the same Service Levels, and reserves the right to vary the CPE from time to time.

Core Layer (For information purposes only)

- BNET's network enhancement now enables Ethernet VPN (EVPN), allowing the deployment of traffic balancing and flexible deployment on Ethernet.
- The EVPN data is transported through Segment Routing over IPv6 (SRV6) technology on SRV6, ensuring that BNET's core network is able to provide the redundancy and protection required on multiple nodes in a single or multiple (GEO) physical sites.
- As such, this allows BNET to mitigate any single point of failure on its core network by allowing the traffic to be dynamically routed in case of any outage.

ANNEX 3
AGGREGATION LINK TECHNICAL SPECIFICATIONS

Where the WDC Service is provided using the Access Provider's Fibre Based Network:

The WDC Aggregation Link(s) is/are:

- (a) provided for a minimum bandwidth of 10 Gbit/s;
- (b) delivered over a fully redundant fibre path based on available protection levels specified in Annex 2 of this Schedule 6.1, and in accordance with the defined charges/premiums set out in Schedule 3 (Pricing); and
- (c) provided with default protection mechanisms, including MSP 1+1, Sub-Network Connection Protection (SNCP), and Silver auto switching of 50ms.

The regulated MRC applicable to the WDC Aggregation Link is determined in accordance with Schedule 3 – (Pricing) of the Reference Offer.

ANNEX 4
PROVISIONING VALIDATION TEST

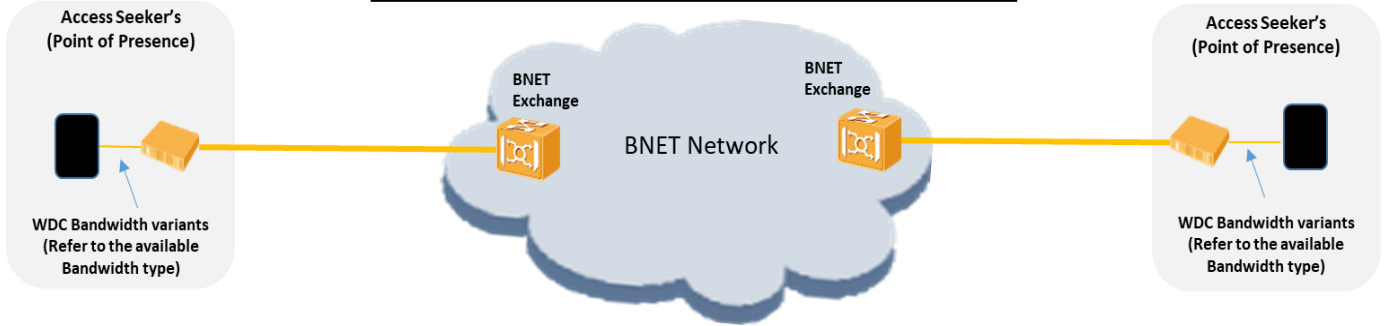
The following provisioning validation test will only be carried out for the WDC Service where the WDC traffic handed over by the Access Seeker to the Access Provider is Ethernet traffic:

Provisioning Validation Test	
Testing Methodology	ITU-T Y.1564
Testing Mode	Layer 1-2 Loopback test. Tester simulates CPE
Parameters tested	Throughput, Frame loss, Latency & Jitter
Tester Speed Setting	WDC Service Speed
Tester Frame Size	Configuration & Performance Test Frame Size = 9600
Acceptance criteria	Link verification using the ITU-T Y.1564 methodology Minimum test time is 15 minutes.
Test Results	Copy provided to the Access Seeker upon request at time of testing

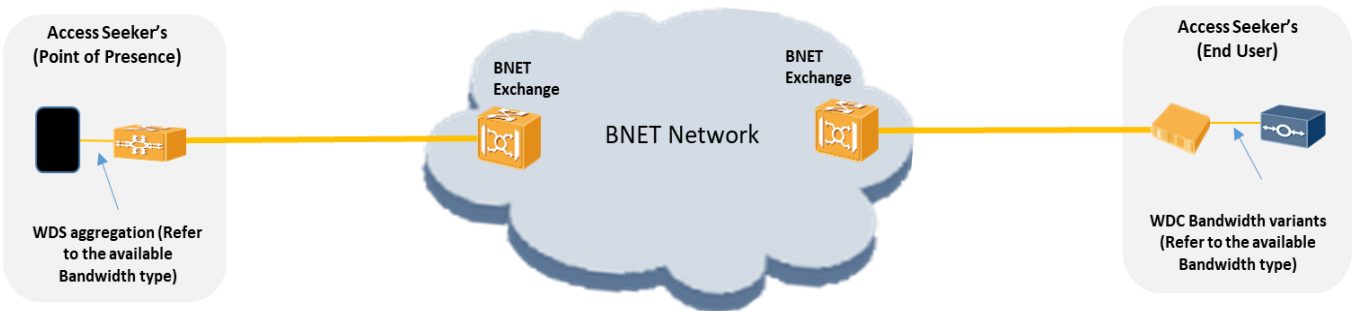
ANNEX 5

WDC SERVICE DIAGRAM AND IMPLEMENTATION INFORMATION

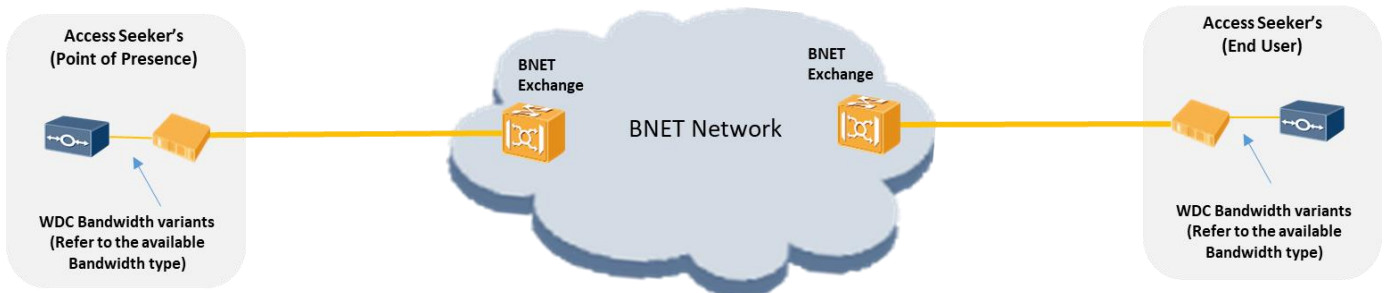
Access Seeker's Point of Presence and the Point of Presence of another Licensed Operator, Or Two of the Access Seeker's Points of Presence;



Access Seeker's Point of Presence and its End User Premises



Point to Point of an Access Seeker's End Users



LEGENDS:



BNET (Node)



BNET (CPE)



BNET's Access Fiber cable



BNET's aggregation CPE/Co-located node



Access Seeker's POP



End User's layer