

These Service Terms are current as of February 12th, 2019.

1. GENERAL

1.1 Service Summary: IP-VPN Service (the “Service”) is a private Wide Area Network (WAN) service that supports data, voice, and video traffic virtually over a shared packet network. The IP Virtual Private Network (VPN) is built and configured among various Customer Sites that are connected to the Vodafone IP-Multi-Protocol Label Switching Network. It uses a range of site topologies and network access methods, such as private fixed line circuits (ADSL, VDSL, EFM, Fibre Ethernet, and leased line), wireless access, SISA, and Extended Access Service. Additional IP-Network features are available including Multi-VPN/VRF-Lite, IPv4 Multicast, IPv6, and Extranets. In connection with all Service Packages outlined below, Customer may order, Satellite Access, Cloud Connect, Enhanced Network Based Internet Access (“**Enhanced NBIA**”), Secure Network Gateway – Firewall & Intrusion Detection (“**SNG**”), Secure Remote User Access (“**SRUA**”), Vodafone Online Portal Service, Riverbed Optimisation Service, and Web Security Services all as described in the Extra Service Terms. The term “Service” includes each Service Element.

1.2 Service Packages: Customer will purchase the Services under one of the packages below as set out on the Customer Agreement or on an Order.

1.2.1 Wires Only means Customer supplies, installs, maintains, and manages the Customer Equipment.

1.2.2 Managed means Vodafone supplies, installs, maintains, and manages the Vodafone Equipment.

1.3 Structure: These Service Terms apply to the Service and include or are governed by the following documents: (a) each Order, if relevant; (b) the Customer Agreement; (c) Extra Service Terms (if applicable); (d) the General Terms; and (e) any other documents referenced as incorporated in these Service Terms.

1.4 Precedence: Notwithstanding any terms in any framework agreement between the Parties, if there are any conflicting terms in these Service Terms, the following order of precedence applies (highest level of precedence first): (a) the Customer Agreement; (b) the Service Terms; and (c) the General Terms or other framework agreement.

2. CONDITIONS OF USE

2.1 Site Survey: Vodafone may require a Site Survey prior to delivery of a Service Element. Customer will permit Vodafone or its subcontractors to conduct Site Surveys as necessary and Customer will complete the required preparatory work as detailed in the Site Survey report.

2.2 Third Party Providers: Vodafone will use a Third Party Provider or Vodafone Group Company that has the necessary authority to provide a Service Element where required by Applicable Law. Vodafone may novate any Customer Agreements as required in order to comply with Applicable Law.

2.2.1 Incumbent Providers In certain locations Vodafone is required to use an Incumbent Provider to deliver a Service Element (e.g., the last mile access provider). If an Incumbent Provider is unable, declines, or ceases to provide the required Service Element, Vodafone will terminate the affected Service Element(s) and neither Party will be liable to the other as a result of this termination. Vodafone is not responsible for delays caused by Incumbent Providers.

2.2.2 Third Party Agreement: In certain locations, Third Party Provider terms will be set out in a separate agreement directly between Customer and the Third Party Provider (including, if relevant, shrink-wrap or click through agreements). If Customer fails to accept the Third Party's terms and conditions, Customer will not be able to access the affected Service Elements and Vodafone is excused from liability for failure to deliver. Customer may request Vodafone to act as its agent for the purposes of managing the Third Party Provider, including for placing orders, reporting Incidents, receiving invoices from, and making payments to, a Third Party Provider.

2.3 PSTN and IP Voice / Video services: Customer acknowledges that the Service is not a public voice service. Customer and its Users shall not connect or seek to connect the Service to any public voice service, including the public switched telecommunications network (PSTN) or other voice or video services (e.g. voice over IP) unless Customer purchases such services from Vodafone or Customer is permitted to connect the Service to a PSTN in accordance with Applicable Law.

2.4 Public Internet service: Customer acknowledges that the Service is not a public Internet service. Customer and its Users shall not connect or seek to connect the Service to a public Internet service and/or enable the use of public Internet for any voice or

video communication service (e.g. voice over IP), unless Customer purchases public internet service from Vodafone or Customer is permitted to connect the Service to a public internet service in accordance with Applicable Law.

2.5 Customer Sites - Customer Obligations: For the purposes of preparing for and delivery of the Service, Customer agrees to: (a) have in place (or assist Vodafone to do so at Customer's cost) all third party consents necessary to allow Vodafone or its subcontractors to: (i) access Customer Sites, Equipment, and third party property; and (ii) install, configure or maintain Equipment on Customer Sites or third party property; (b) provide secure storage for Equipment sent to Customer Sites; (c) prepare Customer Sites in accordance with Vodafone's instructions; (d) ensure that Customer Sites are safe and represent a suitable working environment; and (e) when possible, give Vodafone 10 Working Days' notice of any event (such as power disconnection) that will disrupt the Service or affect the Equipment.

2.6 Customer Sites - Vodafone obligations: Vodafone will: (a) comply with any reasonable Customer Site access and security procedures disclosed to Vodafone in advance; and (b) deliver installation and maintenance work: (i) during Working Hours, when the work does not involve any suspension of the Service; or (ii) subject to additional charge notified to Customer in advance, outside of Working Hours if requested by Customer or if Vodafone is unable to deliver the works during Working Hours for reasons outside of Vodafone's control.

2.7 Security Obligations: Customer will: (a) design, implement, manage, and archive configuration of internal IP protocols, LAN information, and access lists; (b) provide reasonable security on the Equipment and Customer's private networks to limit misuse of or threat to the Service, Equipment, or Network; and (c) address any misuse or threat identified by Vodafone through the implementation of appropriate security or user controls.

2.8 Authorised Users: Access by Customer to the Service and Equipment is limited to authorised Users. Vodafone will provide each authorised User with a user name, password, or other access information (“**User Details**”). Customer is responsible for: (a) the security of the User Details; (b) providing Vodafone with the identity of the authorized Users and keeping that information current; and (c) authorised Users' compliance with the Customer Agreement. Vodafone accepts no liability for any unauthorised or improper use or disclosure of any User Details. Customer is liable for all acts and omissions conducted using the User Details.

2.9 Freeze Period: Vodafone may delay the delivery of a Service Element during a Freeze Period. “Freeze Period” means: (i) the period generally from 1 December to 15 January each year; and (ii) any period involving a significant spike in Network usage.

2.10 Applicable Laws: Vodafone and Customer shall respectively comply with all Applicable Law.

AUP: Customer agrees to comply with Vodafone's Acceptable Use Policy available at <https://www.vodafone.com/business/AcceptableUsePolicy>.

3. EQUIPMENT

3.1 Equipment: Customer must have Equipment that meets Vodafone's specifications on the Customer Site to use the Service. Customer may purchase Equipment from Vodafone or from its own suppliers. The Equipment Terms apply to Vodafone Equipment and Customer Equipment, found at <http://www.vodafone.com/business/vqgeneralterms>.

3.2 Cisco End User Terms: Customer agrees to comply with the terms and conditions as contained under the URL links below, as updated from time to time:

3.3 Cisco Service Descriptions. The Cisco Service Descriptions and additional End User Obligations are located at: www.cisco.com/web/about/doing_business/legal/service_descriptions/

3.4 Cisco End User License Terms. Cisco branded products and documentation are provided to the End User subject to the then-current Cisco end user license terms. A current copy of the Cisco end user license terms is available at: <http://www.cisco.com/c/en/us/td/docs/general/warranty/English/EU1KEN.html>

3.5 Cisco Limited Warranty. The only warranty provided with respect to any Cisco Product is the written limited warranty statement provided with that Product or, if no warranty statement is provided with a Product, the limited warranty statement is available at the following URL: <http://www.cisco.com/c/en/us/products/warranty-listing.html>

3.6 Disclaimer. Except as specified in the limited warranty statement specified in Paragraph 3.5 above, all express or implied

conditions, representations or warranties, including, without limitation, any implied warranty or condition of merchantability, fitness for a particular purpose (even if known to Cisco), non-infringement, satisfactory quality or arising from a course of dealing, law, usage or trade practice are hereby excluded to the greatest extent allowed by applicable law. To the extent an implied warranty cannot be excluded, such warranty is limited to the 90 day period provided in the limited warranty statement. This disclaimer and exclusion will apply even if the express warranty set forth above fails of its essential purpose.

3.7 Compliance with Laws. End users have an obligation to comply with all applicable Cisco published policies, including the Software License Transfer Policy and the Used Equipment Policy as amended from time to time; for example: http://www.cisco.com/c/en/us/products/cisco_software_transfer_relicensing_policy.html

4. DATA PROTECTION

4.1 Vodafone is the Data Controller for this Service. Vodafone's Data Protection Terms when Vodafone is Data Controller apply.

5. SUPPORT AND DELIVERY SERVICES

5.1 Support Service: Vodafone will provide Customer with Support Service for the Service Elements ordered by Customer.

5.2 Support Parameters: Support Service is available in English only. Support Service is available as shown below:

Support Service	Service Cover Period
Incident Management for Priority 1 & 2 Incidents	24/7
Incident Management for Priority 3 & 4 Incidents	Working Hours
Service Request Fulfilment	Working Hours

5.3 Contact: Customer must appoint primary and secondary points of contact responsible for accessing the Support Service and communicating with Vodafone during the relevant Service Cover Period. Customer will inform Vodafone, and keep Vodafone up-to-date with the appointed individuals' identity and level of access.

5.4 Conditions: Customer will: (a) reimburse Vodafone for reasonable expenses associated with a Customer Site visit or for other actions taken when Customer has reported an Incident caused by an Excluded Event; and (b) permit Vodafone to interrupt the Service at the Customer Site to resolve a Priority Level 1 or 2 Incident (or the Incident will be downgraded to a Priority Level 3 Incident).

5.5 Planned Works: Vodafone may temporarily interrupt the Service to carry out Planned Works. Vodafone will notify Customer in advance of any Planned Works. "Planned Works" means planned Vodafone-initiated changes to the Service or Equipment (for example, to carry out essential maintenance or upgrades).

5.6 Agreed Delivery Date: Vodafone will provide Customer with the delivery date of a Service Element ("Agreed Delivery Date") and use reasonable endeavours to deliver the Service Element by the Agreed Delivery Date. If Customer requests a change before delivery of the Service Element, Vodafone will either adjust or cancel the applicable Order subject to any Recovery Charge and/or amend the Agreed Delivery Date, as applicable.

5.7 Service Commencement Date: Vodafone will perform its standard testing procedure for the Service. When Vodafone considers that the standard testing criteria have been met, Vodafone will make the Service available to Customer or notify Customer that the Service is ready for use ("Service Commencement Date").

5.8 Correction: Customer must notify Vodafone within 5 Working Days of the Service Commencement Date if the Service does not materially conform to the standard testing criteria and provide sufficient supporting details. Upon receipt of notification, Vodafone will take reasonable action to meet the standard testing criteria.

5.9 Expedited Delivery: When requested by Customer, Vodafone will use reasonable efforts to meet an expedited Agreed Delivery Date (subject to additional Charges). Service Levels do not apply to an expedited delivery date.

5.10 Customer Delays: If a Customer's act or omission delays the Service Commencement Date, then Vodafone may start billing monthly recurring charges from the original Agreed Delivery Date and charge Customer for its reasonable costs (including Third Party Provider costs) that result from the delay. Examples of Customer delays are Customer's failure to: (a) provide complete or accurate information, access, or assistance as reasonably required, and (b) complete necessary works resulting from a Site Survey. If the delay extends 60 Working Days beyond the original Agreed Delivery Date, Vodafone may terminate the Order and apply a Recovery Charge. If appropriate, Vodafone will set a new Agreed Delivery Date.

6. SERVICE LEVEL TERMS

6.1 Applicability: Service Levels and Service Credit terms apply

from the Service Commencement Date at the Customer Site depending on the Service Level measure, unless stated otherwise.

6.2 Excluded Events: Vodafone is not responsible for failure to meet Service Level if the Service Level is affected by an Excluded Event.

6.3 Service Levels and Service Credits apply to Customer Sites located within a PoP Tier or SISA Band location. When a Customer Site falls into a SISA Band, the Service Levels for the SISA Band will apply instead of the Service Levels for Pop Tiers. If a location does not fall within a PoP Tier or SISA Band, Vodafone will use reasonable endeavours to deliver the Services and will provide a Service Level Objective for those locations on request.

6.4 If Customer selects an access technology not recommended by Vodafone, the Service Levels will not apply to the affected Customer Site and different Service Levels or Service Level Objectives will be agreed between the Parties.

7. SERVICE COMMENCEMENT

7.1 Service Level: The Service Commencement Date for a Service Element will be on or before the Agreed Delivery Date unless Customer requests a change in Services prior to the Agreed Delivery Date.

8. SERVICE AVAILABILITY

8.1 Calculation: Percentage Availability is calculated as: $[(A - B)/A] \times 100$. "A" equals 43200 minutes each full month. "B" equals the number of whole minutes when the Service is Unavailable in the Monthly Measurement Period.

8.2 Service Levels: The following Availability Service Levels and Service Level Objectives apply to each Customer Site in a relevant PoP Tier, SISA Band or Extended Access Country Group depending on the Site Classification:

8.2.1 Target availability - PoP Tier 1 – PoP Tier 5:

Site Classification	Pop Tier 1		Pop Tier 2		Pop Tier 3		Pop Tier 4		Pop Tier 5	
	% Service Availability	*Minutes Unavailable	% Service Availability	*Minutes Unavailable	% Service Availability	*Minutes Unavailable	% Service Availability	*Minutes Unavailable	% Service Availability	*Minutes Unavailable
Business Basic	96.50	1533	93	3066	93 (SLO)	3066	None	N/A	None	N/A
Business Standard	98	876	96	1752	96 (SLO)	1752	None	N/A	None	N/A
Corporate Basic	99.90	43.8	99.85	65.7	99.4	262.8	98 (SLO)	876	98.88	491
Corporate Standard	99.95	21.9	99.90	43.8	99.6	175.2	98.8 (SLO)	525.6	99.44	245*
Corporate Core	99.99	4.38	99.95	21.9	99.7	131.4	99 (SLO)	438	99.72	123
Corporate Core Plus	99.995	2.19	99.99	4.38	N/A	N/A	N/A	N/A	N/A	N/A

*Only when secondary circuit over Ethernet, EFM or Leased Line.

8.2.2 Target Availability - Secure Internet Site Access

Site classification	Service availability	Minutes Unavailable
SISA IPsec Only	99.99%	4.38 minutes
SISA Business Basic	93% (SLO)	3066 minutes
SISA Business Standard	93.5% (SLO)	3220 minutes
SISA Corporate Basic	98% (SLO)	876 minutes

8.2.3 Target Availability - Extended Access

EA Country Group	Single access Customer Site	Dual access Customer Site
1	99.7%	99.9%
2	99.2%	99.5%
3	99.0%	99.2%

Extended Access Services apply to those Customer Sites located in an Extended Access Country Group.

9. PRIORITY OF INCIDENTS

9.1 The following Priority Level examples apply to the Service:

Priority Level	Priority Level examples
1	A total loss of Service at one or more Customer Sites.
2	A partial loss of Service that has a significant detrimental effect on the Customer's ability to perform normal communications (examples include loss of a primary, secondary or back-up circuit, significant packet loss, or loss of capacity) at one or more Customer Sites.
3	A degradation in Service performance or a Priority Level 1 or Priority Level 2 Incident when Vodafone has either

	been: (a) denied access to a Customer Site; or (b) is unable to complete Planned Works in order to restore normal service for reasons outside Vodafone's reasonable control
4	A non-Service affecting event or an event not classed as Priority Level 1, 2 or 3 Incident.

10. INCIDENT RESOLUTION TIMES

10.1 Priority 1 and Priority 2 Incidents are both treated with urgency. Incident Resolution Time is calculated as the number of whole hours between the time Vodafone issues a Unique Identifier and the time Vodafone issues a Closure Notification for the Incident.

10.2 Classification: Incident resolution Service Levels apply per circuit rather than to the overall Customer Site configuration.

10.3 Service Levels: The target Incident resolution times for Priority 1 and Priority 2 Incidents are as follows:

10.3.1 PoP Tiers:

Site Classification	PoP Tier 1	PoP Tier 2	PoP Tier 3	PoP Tier 4	PoP Tier 5
Business – Basic	24 hours	48 hours	48 hours	Reasonable Endeavours	Reasonable Endeavours
Business – Standard	24 hours	48 hours	48 hours	Reasonable Endeavours	Reasonable Endeavours
Corporate – Basic	4 hours	6 hours	12 hours	12 hours	36 hours
Corporate – Standard	4 hours	6 hours	12 hours	12 hours	36 hours
Corporate – Core	4 hours	6 hours	12 hours	12 hours	36 hours
Corporate – Core Plus	4 hours	6 hours	n/a	n/a	n/a

10.3.2 SISA Bands:

Site Classification	SISA Band A	SISA Band B	SISA Band C	SISA Band D
SISA IPsec Only	4 Hours	4 Hours	4 Hours	4 Hours
SISA Business Basic	48 Hours (SLO)	48 hours (SLO)	96 hours (SLO)	96 Hours (SLO)
SISA Business Standard	48 Hours (SLO)	48 hours (SLO)	96 hours (SLO)	96 Hours (SLO)
SISA Corporate Basic	8 hours (SLO)	12 hours (SLO)	24 hours (SLO)	48 Hours (SLO)

11. SERVICE DEGRADATION

11.1 The Service Degradation Service Levels apply when: (a) Customer Sites are: (i) directly connected to the IP Backbone Core at one of the available symmetric bandwidth options, or (ii) connected using the Asymmetric Bandwidth option if the target explicitly states it applies to an Asymmetric Service; (b) the distance between the Vodafone Managed Router (as applicable to the Service Level or SLO) and the IP Backbone Core is less than 150 kilometres; (c) where symmetric bandwidth access circuits are provided, the minimum available port bandwidth, is at least 1.5Mbps; (d) the IP packet size is 64 bytes for Premium CoS and the average packet size for Standard and Enhanced CoS is 384 bytes; and (e) Premium CoS bandwidth, as applicable, at the Customer Site is a maximum of 50% of the port bandwidth.

11.2 The Service Degradation Service Levels do not apply: (a) to Priority Level 1 or 2 Incidents; (b) to local Internet access as part of Secure Internet Site Access Service; and/or (c) if Customer exceeds the bandwidth specified in the Order for the relevant Class of Service.

11.3 Service Degradation Measurements:

11.3.1 Round Trip Delay (RTD)

(a) The Round Trip Delay SLO and Service Levels are measured as the total time taken for an IP packet to pass from one applicable Router to another applicable Router and then back to the original Router. The RTD SLO and Service Levels will be calculated as the average of all measurements taken in the Monthly Measurement Period.

(b) The RTD Service Level Objectives for the IP Backbone Core between two IP Backbone Core Routers are set out below:

CoS	Service Level
	RTD IP Backbone Core (between two IP Backbone Core Routers)
Premium CoS	Section 1 of RTD Table
Enhanced CoS	Section 1 of RTD Table
Standard CoS	n/a
Default CoS	n/a

11.3.2 Packet Loss

(a) Packet Loss measures the percentage of IP packets that are not successfully sent over the IP Backbone Core during the Monthly Measurement Period.

(b) The Service Levels for Packet Loss are as follows:

CoS	Service Level		
	Both Customer Sites connected using Symmetric bandwidths	One or both Customer Sites connected using Asymmetric bandwidths	Extended Access
*Premium CoS	0.04%	0.2%	0.1%
**Enhanced CoS	0.06%	0.3%	0.5%
**Standard CoS	0.08%	n/a	n/a
Default CoS	n/a	n/a	n/a
*Assumes the use of 64 byte IP packets.			
**Assumes the use of 384 byte IP packets.			

11.3.3 Jitter

(a) Jitter measures the variation between the arrival of consecutive 64 byte IP packets caused by network congestion, timing differences or route changes that is averaged over the Monthly Measurement Period.

(b) The Jitter Service Levels below apply to pairs of Customer Sites connected with Asymmetric or symmetric bandwidths:

CoS	Access Circuit bandwidth	Service Level	Service Level – Extended Access
Premium CoS only	<1 Mbps	67 milliseconds	20 milliseconds
	1 Mbps to 10 Mbps	20 milliseconds	
	>10 Mbps	<10 milliseconds	
	>155 Mbps	<5 milliseconds	

12. SERVICE CREDITS

12.1 Service Credits for delay

12.1.1 Customer is entitled to a Service Credit if the Service Commencement Date of a new Service Element at a Customer Site or Configuration Change is delayed beyond the Agreed Delivery Date.

12.1.2 The applicable Customer Site must be in a PoP Tier or SISA Band and directly connected to the IP Backbone to claim a Service Credit for delay.

Delay in Service Commencement Date of:	Number of whole Working Days beyond Agreed Delivery Date	Service Credit (% of the installation Charge)
New Customer Site or Hard Configuration Change	1 to 10 days	5%
	11 to 20 days	20%
	>20 days	25%
Soft Configuration Change to Customer Site	1 to 10 days	5%
	>10 days	20%
Customer may only claim a Service Credit for the highest applicable time period category, not each time period that may pass for the same Incident.		

12.1.3 The installation Charge referenced above is Vodafone's standard installation Charge excluding additional charges due to specific Customer Site requirements, such as additional construction charges.

12.2 Service Credits for Availability

12.2.1 The Service Credit is a percentage of the monthly recurring port Charges for the affected Customer Site during the Monthly Measurement Period.

12.2.2 Availability at the Service Demarcation Point per Customer Site located in a PoP Tier or SISA Band:

Difference in actual monthly Availability % versus Service Level in the Monthly Measurement Period	Service Credit
Up to -1%	2.5%
>-1% to -2%	10%
>-2% to -3%	20%
>-3%	50%

12.2.3 Availability at the Service Demarcation Point per Customer Site located in an Extended Access Country Group in a Monthly Measurement Period:

EA Country Group	Single Customer Availability	Access Site	Dual Customer Availability	Access Site	Service Credit Percentage
1	99.7% to 98.7%		99.9% to 98.9%		25%
	Less than 98.7%		Less than 98.9%		50%
2	99.2% to 98.0%		99.5% to 98.3%		25%
	Less than 98.0%		Less than 98.3%		50%

3	99.0% to 97.0%	99.2% to 97.2%	25%
	Less than 97.0%	Less than 97.2%	50%

12.2.4 A Service Credit cap of 50% of the monthly recurring port Charge for the affected Customer Site applies to the Service Credits Customer may claim for the Availability Service Levels each Monthly Measurement Period.

12.3 Service Credit for Incident resolution

12.3.1 The Service Credit is a percentage of the monthly recurring port Charges for the affected Customer Site during the Monthly Measurement Period. The following Service Credit applies to the Incident Resolution Service Levels:

Number of hours beyond the Incident resolution Service Level that the Priority Level 1 or 2 Incident remains unresolved	Service Credit Percentage	
	Business sites	Corporate sites
Between 1 and 15 hours inclusive rounded up to the nearest hour	2.5% per hour	5% per hour
More than 15 hours	50%	100%
Customer may only claim a Service Credit for the highest applicable time period category, not each time period that may pass for the same Incident.		

12.4 Service Credits for Service Degradation

12.4.1 The following Service Credit for Service Degradation applies when Vodafone has: (a) verified that the relevant Service Level has been exceeded; and (b) diagnosed that the Service Degradation is due to a failure in the IP Backbone Core or the access circuit (as applicable):

Service Degradation type	Service Credit per Customer Site (% of the monthly port Charge for the affected Customer Site pro-rated to Incident duration)
IP Backbone Core Round Trip Delay, Jitter or Packet Loss	20%

12.5 A Service Credit cap of 20% of the monthly port Charge for an affected Customer Site applies to Jitter, Packet Loss, and Round Trip Delay Service Credits, in aggregate per Monthly Measurement Period.

12.6 Service Credit Terms

12.6.1 Customer must claim Service Credit via its Vodafone account manager within 30 days of the end of the Monthly Measurement Period. Service Credit will be applied to Customer's next bill after agreement that Service Credit is due.

12.6.2 Service Credits do not apply to any Incident connected to: (a) any Excluded Event and/or (b) the Service operating on back-up or resilient links (except during Incident resolution times).

12.6.3 The total Service Credit payable in any given Monthly Measurement Period may not exceed 100% of the monthly port Charge for the affected Customer Site.

12.6.4 If one Incident causes a failure of two or more Service Levels, only the greater Service Credit amount of the Service Levels is payable.

12.6.5 The Service Credits as set out in these Service Terms are Customer's sole and exclusive remedy against Vodafone for any failure in Service performance. Service Credits have been calculated as, and are, a genuine pre-estimate of the loss likely to be suffered by the Customer for failure in Service performance. Service Credit may only be applied to Charges for the Service and have no cash value.

13. DEFINITIONS

13.1 ADSL means asymmetric digital subscriber line.

13.2 Applicable Law means law, regulation, binding code of practice, rule, order or requirement of any relevant government or governmental agency, professional or regulatory Authority, each as relevant to (i) Vodafone in the provision of the Service and/or (ii) Customer in receipt of the Service or carrying out of its business.

13.3 Asymmetric Bandwidths or **Asymmetric** means ADSL and/or VDSL access circuits.

13.4 Availability means the percentage of time the Service is available for use at the Service Demarcation Point of each Customer Site in a Monthly Measurement Period.

13.5 Authority means those governments, agencies, and professional and regulatory authorities that supervise, regulate, investigate, or enforce Applicable Law.

13.6 Charges means the charges or fees set out in the Customer Agreement, the Order or Price Lists.

13.7 Class of Service or **CoS** means the classes of Service used to prioritise network traffic.

13.8 Closure Notification means notice of the changed status of an Incident or other event to closed, whether or not the Customer has actually received that notice.

13.9 Configuration Change(s) means any Hard Configuration Change and/or any Soft Configuration Change.

13.10 Customer means the Party receiving Service under the Customer Agreement who is a member of the Customer Group.

13.11 Customer Agreement means an agreement for purchase of Services signed by both Parties.

13.12 Customer Equipment means Equipment not owned by Vodafone that is used with the Service, including Customer Routers. Equipment sold by Vodafone to Customer is Customer Equipment.

13.13 Customer Group means the Customer and any company that Customer has the beneficial ownership of more than 50% of the issued share capital, or the legal power to direct the general management of the company in question, either at or after the date of the Customer Agreement (and **Customer Group Company/Customer Group Companies** has a corresponding meaning).

13.14 Customer Router means the Router at a Customer Site provided and managed by Customer.

13.15 Customer Site(s) means the Customer's premises that Vodafone must access to provide the Service or the location where the Service is to be provided.

13.16 Data Protection Terms means the terms regarding data protection in the General Terms.1.0 or later, or if those General Terms are not applicable, the Data Protection Terms found at <http://www.vodafone.com/business/vgegeneralterms>.

13.17 Default CoS means the CoS allocated to any traffic not assigned to Standard CoS, Enhanced CoS or Premium CoS.

13.18 EFM means Ethernet First Mile that is a copper based Ethernet access technology that may be used to provide symmetric bandwidth access circuits of 512Kbps to 20Mbps.

13.19 Enhanced CoS means a medium level of CoS consisting of three levels (1, 2 and 3) that prioritises traffic over classes of lower priority to reduce delayed or dropped traffic.

13.20 Equipment means the hardware and related software Customer must have to use the Service.

13.21 Equipment Terms means the terms regarding Equipment in the General Terms.1.0 or later, or if those General Terms are not applicable, the Equipment Terms found at <http://www.vodafone.com/business/vgegeneralterms>.

13.22 Excluded Event means any of the following: (a) an Incident with another Vodafone service purchased under a separate Customer Agreement; (b) an Incident associated with non-Vodafone-supplied power, Customer Equipment, non-maintained structured cabling or other systems or networks not operated or provided by Vodafone (including an Incident relating to consumption of services over the internet); (c) an Incident caused by the negligence, act, or omission of Customer or a third-party not within Vodafone's direct control; (d) Customer's delay or non-performance of any of Customer obligations set out in the Customer Agreement; (e) an Incident or delay resulting from a request by Customer for expedited delivery of the Service; (f) Customer's request to modify or test a Service Element; (g) a Force Majeure event or Service suspension that is permitted under the Customer Agreement; (h) the inability or refusal by a Third Party Provider to provide the access circuit at a Customer Site; (i) a Configuration Change during implementation; and (j) an Incident caused by service failure at any other Customer Site.

13.23 Extended Access means an inter-provider MPLS interconnection that extends the Service using third party networks.

13.24 Extended Access Country Group means the group of countries set out in the attached document.

13.25 Extra Service Terms means the additional terms that apply to certain Service Elements ordered by Customer.

13.26 Force Majeure means any circumstances, events, omissions, or accidents beyond the reasonable control of a Party, and that could not have been avoided by due diligence, that prevent that Party from performing any or all of its obligations.

13.27 General Terms means the General Terms or master agreement identified in the Customer Agreement.

13.28 Hard Configuration Change means a change to the Service including: (a) transfer of the Service from one Customer Site to another; (b) migrating between physical service access options (including port speed or port type); (c) modifications requested by Customer to alter the Service at a Customer Site requiring physical intervention; (d) physical movement of a Customer Site; and/or (e) removing the Service from a Customer Site.

13.29 Incident means an unplanned interruption to the Service, a reduction in the quality of a Service, or a failure of a Service configuration item.

13.30 Incident Management means the end-to-end management of Incidents by Vodafone.

13.31 Incumbent Provider means the regulated operator who is authorised to provide a Service Element in a given country. An Incumbent Provider is also a Third Party Provider.

13.32 Initial Term means the term of the individual Service Element as set out in the Order or Customer Agreement.

13.33 IP Backbone Core means Vodafone's multi-protocol label switching (MPLS) enabled network platform.

13.34 Jitter means a measure of the variation between the arrival of consecutive 64 byte IP packets caused by network congestion, timing differences or route changes.

13.35 Monthly Measurement Period means the period from the Service Commencement Date up to the end of the calendar month and then each calendar month thereafter (save for the last month that will end upon the termination date of the Service).

13.36 NTE means Equipment used to terminate a Customer connection for Ethernet access or a local internet access provider's device for SISA.

13.37 Network means the communications network and the equipment and premises that are connected to the network that are used by Vodafone and Vodafone Group Companies.

13.38 Order is defined in the relevant Customer Agreement.

13.39 Packet Loss means the percentage of IP packets that are not successfully sent over the MPLS Core during the relevant measurement period.

13.40 Party or Parties means the parties to the Customer Agreement.

13.41 PoP Tier means one of the groups of coverage set out in the attached document.

13.42 Price List means Vodafone's standard pricing in the relevant territory at the applicable time.

13.43 Premium CoS means the highest level of CoS, prioritised over all other traffic.

13.44 Recovery Charge means any amount payable by Customer for early termination or failure to meet commercial commitments as set out in the Customer Agreement.

13.45 Router means the customer-edge router equipment (including any installed software, antennas, or SIMs as applicable) used in connection with the Service which may be a Vodafone Router or Customer Router.

13.46 Round Trip Delay or RTD means the total time taken for an IP packet to pass from one Router to another Router and then back to the original Router.

13.47 RTD Table means the Service Level Objectives for Round Trip Delay set out in the attached document.

13.48 Service Credit(s) means the service credit payable by Vodafone to Customer in accordance with these Service Terms.

13.49 Service Degradation means one or all of the following metrics: Jitter, Round Trip Delay, and/or Packet Loss.

13.50 Service Demarcation Point means: (a) the port between the Router and Customer Network for the Managed Service package; (b) the service interface of the access circuit for the Wires Only Service package; or (c) the NTE where Ethernet technology is used for the Wires Only Service package. In this clause, "**Customer Network**" means the whole or part of the Customer network that is connected to the IP Backbone Core via the Service.

13.51 Secure Internet Site Access or SISA means the provision of access to the Service using an encrypted tunnel over Vodafone provided local in country internet access or off-net access.

13.52 Service Element means the individual components of the Service including optional services if applicable and configuration changes.

13.53 Service Level(s) means the service levels that apply to the provision of the Service as set out in these Service Terms.

13.54 Service Level Objective or SLO means the performance Vodafone expects to provide, without associated Service Levels or

Service Credit.

13.55 Service Request means a formal communication from Customer for the provision of a Service change, information, advice or access to a Vodafone Service.

13.56 SIMs means subscriber identity modules that are electronic memory devices that store user specific data to allow controlled and secure use of equipment on mobile networks.

13.57 SISA Band means one of the groups of coverage set out on in the attached document.

13.58 SISA Gateway means the device used to terminate encrypted tunnels over the internet as part of the provision of Secure Internet Site Access.

13.59 Site Classification the classification assigned to a Customer Site in accordance with the Site Classification Matrix.

13.60 Site Classification Matrix means the matrix that defines the Site Classification depending on its topology and access technology set out in the attached document.

13.61 Site Survey means a survey of a Customer Site to assess whether (in Vodafone's opinion) the existing infrastructure is sufficient to provide the Service at that Customer Site.

13.62 Soft Configuration Change means a change to the Service that is not a Hard Configuration Change, including: (a) modifications to the configuration of Customer's VPN as requested by Customer and not classified as a Hard Configuration Change; and/or (b) a modification to the bandwidth allocated to a Class of Service for a Customer Site.

13.63 Standard CoS means a lower level of CoS consisting of one level that prioritises traffic over Default CoS to reduce delayed or dropped traffic.

13.64 Third Party Provider means a third party contracted by either Vodafone or Customer that provides a Service Element or that provides service that connects to the Service. Third Party Providers may include members of the Vodafone Group.

13.65 Unique Identifier means the unique reference key given to the Customer by Vodafone, once Vodafone has logged an Incident or another event.

13.66 Unavailable or Unavailability means a Customer Site cannot exchange data with another Customer Site for reasons other than an Excluded Event.

13.67 User means an end user of the Services who must be a permanent or temporary employee or sub-contractor of Customer.

13.68 Vodafone means the member of the Vodafone Group that is a Party to the Customer Agreement.

13.69 Vodafone Equipment means Equipment supplied by Vodafone for Customer's use, including Vodafone Routers.

13.70 Vodafone Group means: (i) Vodafone Group Plc, Vodafone and any company that Vodafone Group Plc owns (directly or indirectly) 15% or more of the issued share capital; and (ii) any partner market listed on the "Where we are" page in the "Who we are" section at www.vodafone.com (and **Vodafone Group Company/Vodafone Group Companies** has a corresponding meaning).

13.71 Vodafone Router means the Router at a Customer Site provided, owned and managed by Vodafone.

13.72 Working Day means on Monday to Friday inclusive, but excluding public holidays in the country where the Service are being provided.

13.73 Working Hours means the hours between 0900 and 1700 (local time) on a Working Day.

IP-VPN SERVICE - SITE CLASSIFICATION MATRIX

Each Customer Site is classified into one of the following classes:

Site classification	Topology description	Applicable access technologies	
		Primary	Backup /Secondary
Business Basic	Single access.	ADSL / VDSL / FTTP	N/A
Business Standard	Single access with back-up (active or passive). Single or dual CE routers (where advised). Backup connected to different PE router than the primary service wherever possible.	ADSL / VDSL / FTTP	ADSL / VDSL / FTTP / SISA / VSAT
Corporate Basic	Single access. Optional secondary access to same PoP.	Ethernet / EFM / leased line	N/A
Corporate Standard	Single access with backup (active or passive). Single or Dual CE router (where advised). Backup connected to different PE router wherever possible.	Ethernet / EFM / leased line	ADSL / VDSL / FTTP / VSAT / SISA
Corporate Core	Dual CE routers (Customer Sites); or Cloud Provider Demarcation Point (Cloud Connect). Dual Access/PoP. Dual building entry points.	Ethernet / leased line	Ethernet / leased line
Corporate Core Plus (Only applies to PoP Tier 1&2)	Dual CE routers. Dual Access/PoP with 5 metre separacy. Separate building entry points.	Ethernet / leased line	Ethernet / leased line
SISA IPsec Only	Gateway for termination of regional SISA IPsec traffic.	N/A	N/A
SISA Business Basic	Single access SISA.	SISA Broadband Access (ADSL, VDSL, FTTP, 3G/4G)	N/A
SISA Business Standard	Single access SISA with diverse IPsec Tunnels to separate SISA Gateways.	SISA Broadband Access (ADSL, VDSL, FTTP, 3G/4G)	2nd IPsec tunnel to separate SISA Gateway
SISA Corporate Basic	Single access SISA connection.	SISA Dedicated Access (Ethernet, EFM, Leased Line)	N/A

IP-VPN SERVICE – POP TIERS & SISA BANDS

The locations set out here are indicative only and may be updated from time to time. Vodafone will confirm availability in the Order.

PoP Tiers: The PoP tiers include the locations, service availability tier and incident resolution time tier in the table below:

PoP Country	PoP Location	Region	Service availability tier	Incident resolution tier	PoP Country	PoP Location	Region	Service availability tier	Incident resolution tier	PoP Country	PoP Location	Region	Service availability tier	Incident resolution tier
Angola	Luanda	Africa	5	5	India	Thane	APAC	3	1	Spain	Barcelona	Europe	1	1
Argentina	Buenos Aires	LATAM	2	2	India	Noida	APAC	3	1	Spain	Madrid	Europe	1	1
Australia	Adelaide	APAC	1	1	India	Chandigarh	APAC	3	1	Swaziland	Mbabane	Africa	5	5
Australia	Brisbane	APAC	1	1	India	Coimbatore	APAC	3	1	Sweden	Stockholm	Europe	1	1
Australia	Melbourne	APAC	1	1	Indonesia	Jakarta	APAC	3	3	Switzerland	Zurich	Europe	1	1
Australia	Perth	APAC	1	1	UK	Armagh	Europe	1	1	Taiwan	Taipei	APAC	3	1
Australia	Sydney	APAC	1	1	Ireland	Dublin	Europe	1	1	Tanzania	Dar Es Salaam	Africa	5	2
Austria	Vienna	Europe	1	1	UK	Lisburn	Europe	1	1	Thailand	Bangkok	APAC	2	2
Bahrain	Manama	Middle East	3	3	UK	London Derry	Europe	1	1	Thailand	Nonthaburi	APAC	2	2
Belgium	Brussels	Europe	1	1	UK	Omagh	Europe	1	1	Turkey	Istanbul	Europe	2	2
Botswana	Gaborone	Africa	5	4	UK	Portadown	Europe	1	1	UAE	Abu Dhabi	Middle East	4	4
Brazil	Rio de Janeiro	LATAM	2	2	UK	Strabane	Europe	1	1	UAE	Dubai	Middle East	4	4
Brazil	Sao Paulo	LATAM	3	2	Israel	Rosh Ha'Ayin City	Europe	1	3	Uganda	Kampala	Africa	5	4
Bulgaria	Sofia	Europe	3	3	Italy	Milan	Europe	1	1	Ukraine	Kiev	Europe	1	1
Cameroon	Douala	Africa	5	5	Japan	Osaka	APAC	1	1	UK	Birmingham	Europe	1	1
Canada	Montreal	US	1	1	Japan	Tokyo	APAC	1	1	UK	Bracknell	Europe	1	1
Canada	Toronto	US	1	1	Kenya	Mombasa	Africa	5	4	UK	Bristol	Europe	1	1
China	Beijing	APAC	1	1	Kenya	Nairobi	Africa	5	4	UK	Edinburgh	Europe	1	1
China	Guangzhou	APAC	1	1	Kuwait	Kuwait	Middle East	1	1	UK	Glasgow	Europe	1	1
China	Shanghai	APAC	1	1										
Cote D'Ivoire	Abidjan	Africa	5	5	Liberia	Monrovia	Africa	5	5	UK	Leeds	Europe	1	1
Czech Republic	Prague	Europe	1	1	Madagascar	Antananarivo	Africa	5	5	UK	London	Europe	1	1
Denmark	Copenhagen	Europe	1	1	Malawi	Blantyre	Africa	5	5	UK	Manchester	Europe	1	1
Djibouti	Djibouti	Africa	5	5	Malaysia	Kuala Lumpur	APAC	2	2	UK	Swindon	Europe	1	1
DRC	Kinshasa	Africa	5	4						USA	Atlanta	US	1	1
DRC	Lubumbashi	Africa	5	4	Mauritius	Ebene	Africa	5	5	USA	Boston	US	1	1
Egypt	Cairo	Africa	3	3	Mexico	Monterrey	Americas	3	2	USA	Charlotte	US	1	1
Equatorial Guinea	Malabo	Africa	5	5	Mexico	Mexico City	Americas	3	2	USA	Chicago	US	1	1
Ethiopia	Addis Ababa	Africa	5	5	Morocco	Rabat	Africa	3	3	USA	Dallas	US	1	1
Finland	Helsinki	Europe	1	1	Mozambique	Maputo	Africa	5	5	USA	Denver	US	1	1
France	Marseille	Europe	1	1	Namibia	Windhoek	Africa	5	5	USA	El Segundo	US	1	1
France	Paris	Europe	1	1	Netherlands	Amsterdam	Europe	1	1	USA	Houston	US	1	1
Germany	Dusseldorf	Europe	1	1	New Zealand	Auckland	APAC	2	1	USA	Jacksonville	US	1	1
Germany	Frankfurt	Europe	1	1	Nigeria	Lagos	Africa	5	5	USA	Los Angeles	US	1	1
Germany	Hamburg	Europe	1	1	Norway	Oslo	Europe	1	1	USA	Memphis	US	1	1
Ghana	Accra	Africa	5	4	Oman	Wattayah	Middle East	4	4	USA	Miami	US	1	1
Greece	Athens	Europe	1	1	Philippines	Manila	APAC	2	2	USA	New York	US	1	1
Hong Kong	Hong Kong	APAC	1	1	Poland	Warsaw	Europe	1	1	USA	Phoenix	US	1	1
Hungary	Budapest	Europe	1	1	Portugal	Lisbon	Europe	1	1	USA	Portland	US	1	1
India	Bangalore	APAC	2	2	Portugal	Porto	Europe	2	1	USA	San Francisco	US	1	1
India	Chennai	APAC	2	2	Russia	Moscow	Europe	2	2	USA	San Jose	US	1	1
India	Delhi	APAC	2	2	Romania	Bucharest	Europe	3	3	USA	Seattle	US	1	1
India	Mumbai	APAC	2	2	Rwanda	Kigali	Africa	5	5	USA	Washington D.C	US	1	1
India	Pune	APAC	2	2	Senegal	Dakar	Africa	5	5	Vietnam	Hanoi	APAC	3	1
India	Gurgaon	APAC	3	1	Sierra Leone	Freetown	Africa	5	5	Vietnam	Ho Chi Minh city	APAC	3	1
India	Ahmadabad	APAC	3	1	Singapore	Singapore	APAC	1	1	Zambia	Lusaka	Africa	5	5
India	Jaipur	APAC	3	1	South Africa	Johannesburg	Africa	5	2					
India	Vadodara	APAC	3	1	South Korea	Seoul	APAC	1	1					

SISA Bands: For the purposes of the Customer Agreement, the SISA Bands shall include the locations in the tables below:

A	Austria, Belgium, Bulgaria, Denmark, Finland, Germany, Hong Kong, Japan, Netherlands, Norway, Singapore, South Korea, Sweden, Switzerland, UK
B	Albania, Algeria, Andorra, Australia, Azerbaijan, Bahrain, Bosnia and Herzegovina, Cambodia, Cameroon, Canada, China, Costa Rica, Croatia, Czech Republic, Ecuador, Egypt, El Salvador, Estonia, France, Guatemala, Honduras, Hungary, Iceland, Ireland, Israel, Italy, Jordan, Kuwait, Latvia, Lebanon, Lithuania, Luxembourg, Macedonia, Malaysia, Malta, Moldova, Monaco, Morocco, Nicaragua, Oman, Panama, Portugal, Qatar, Romania, Russia, San Marino, Saudi Arabia, Serbia, Slovakia, Slovenia, Spain, Taiwan, Tunisia, Turkey, United Arab Emirates, US, US (Alaska), US (Hawaii), Venezuela, Vietnam.
C	Afghanistan, Angola, Anguilla, Antigua and Barbuda, Argentina, Armenia, Bahamas, Bangladesh, Barbados, Belarus, Bermuda, Bhutan, Botswana, Brunei, Darussalam, Burkina Faso, Burundi, Cape Verde, Cayman Islands, Chile, Colombia, Congo, Cyprus, Dominica, Ethiopia, Faroe Islands, Fiji, Gabon, Georgia, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guam, Guernsey, Haiti, India, Indonesia, Iran, Iraq, Isle of Man, Ivory Coast, Jamaica, Jersey, Kazakhstan, Kenya, Kyrgyzstan, Laos, Libya, Liechtenstein, Macau, Madagascar, Malawi, Maldives, Mali, Martinique, Mongolia, Montenegro, Montserrat, Mozambique, Namibia, Netherlands Antilles (Aruba), Netherlands Antilles (Bonaire), Netherlands Antilles (Curacao), Netherlands Antilles (St. Maarten), New Zealand, Nigeria, Pakistan, Palestine, Peru, Philippines, Poland, Puerto Rico, Reunion, Rwanda, Senegal, Serbia (Kosovo), Seychelles, South Africa, Sri Lanka, Sudan, Syria, Tajikistan, Tanzania, Thailand, Uganda, Ukraine, Uruguay, Uzbekistan, Yemen.
D	American Samoa, Belize, Benin, Bolivia, Brasil, Central African Republic, Chad, Congo, Dem. Rep. (former Zaire), Cuba, Djibouti, Dominican Republic, East Timor, Equatorial Guinea, Eritrea, French Guiana, French Polynesia, Gambia, Guinea, Guinea-Bissau, Guyana, Liberia, Mauritania, Mauritius, Mexico, Myanmar, Nepal, New Caledonia, Niger, Northern Mariana Islands, Palau, Papua New Guinea, Paraguay, Saint Barthélemy, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Sierra Leone, Solomon Islands, South Sudan, Suriname, Swaziland, Togo, Trinidad and Tobago, Turks and Caicos Islands, Virgin Islands (British), Virgin Islands (U.S.), Zambia, Zimbabwe

IP-VPN SERVICE - EXTENDED ACCESS COUNTRY GROUPS

EXTENDED ACCESS GROUP: 1		
Country	Region	Carrier
Jordan	Middle East	Batelco
Kuwait	Middle East	Batelco
Qatar	Middle East	Batelco
Saudi Arabia	Middle East	Batelco
Kuwait	Middle East	Bharti Airtel
Namibia	Africa	Bharti Airtel
China	Asia	China Telecom
China	Asia	China Unicom
China	Asia	CITIC Telecom CPC *
Taiwan	Asia	CITIC Telecom CPC
Cambodia	Asia	FPT
Laos	Asia	FPT
Myanmar	Asia	FPT
Vietnam	Asia	FPT
Argentina	Central & S America	Neutrona (IFX)
Bolivia	Central & S America	Neutrona (IFX)
Brazil	Central & S America	Neutrona (IFX)
Chile	Central & S America	Neutrona (IFX)
Colombia	Central & S America	Neutrona (IFX)
Ecuador	Central & S America	Neutrona (IFX)
Guatemala	Central & S America	Neutrona (IFX)
Mexico	Central & S America	Neutrona (IFX)
Paraguay	Central & S America	Neutrona (IFX)
Perú	Central & S America	Neutrona (IFX)
Venezuela	Central & S America	Neutrona (IFX)
Bangladesh	South Asia	PCCW
Botswana	Africa	PCCW
Cook Islands	Pacific	PCCW
Fiji	Pacific	PCCW
Ghana	Africa	PCCW
Kenya	Africa	PCCW
Kiribati	Pacific	PCCW
Mauritius	Africa	PCCW
Mozambique	Africa	PCCW
Namibia	Africa	PCCW
New Caledonia	Pacific	PCCW
Nigeria	Africa	PCCW
Niue	Pacific	PCCW
Norfolk	Pacific	PCCW
Pakistan	South Asia	PCCW
Papua New Guinea	Pacific	PCCW
Samoa	Pacific	PCCW
Solomon Island	Pacific	PCCW
South Africa	Africa	PCCW
Sri Lanka	South Asia	PCCW
Tanzania	Africa	PCCW
Tonga	Pacific	PCCW
Uganda	Africa	PCCW
Vanuatu	Pacific	PCCW
Zambia	Africa	PCCW
Zimbabwe	Africa	PCCW
Japan	Asia	SoftBank Telecom
Argentina	Central & S America	Telecom Italia Sparkle (TIS)
Bolivia	Central & S America	Telecom Italia Sparkle (TIS)
Brazil	Central & S America	Telecom Italia Sparkle (TIS)
Chile	Central & S America	Telecom Italia Sparkle (TIS)
Colombia	Central & S America	Telecom Italia Sparkle (TIS)
Ecuador	Central & S America	Telecom Italia Sparkle (TIS)
Guatemala	Central & S America	Telecom Italia Sparkle (TIS)
Mexico	Central & S America	Telecom Italia Sparkle (TIS)
Paraguay	Central & S America	Telecom Italia Sparkle (TIS)

Perú	Central & S America	Telecom Italia Sparkle (TIS)
Venezuela	Central & S America	Telecom Italia Sparkle (TIS)
Italy	Europe	Telecom Italia Sparkle (TIS)
Greece	Europe	Telecom Italia Sparkle (TIS)
Malta	Europe	Telecom Italia Sparkle (TIS)
Malaysia	Asia	Telekom Malaysia
Canada	North America	Telus

*CITIC is available to existing CITIC customers only.

EXTENDED ACCESS GROUP: 2		
Country	Region	Carrier
Nigeria	Africa	Bharti Airtel
Saudi Arabia	Middle East	Bharti Airtel
South Africa	Africa	Bharti Airtel
Antigua	Caribbean	C&W Communications
Barbados	Caribbean	C&W Communications
Bermuda	North America	C&W Communications
British Virgin Islands	Caribbean	C&W Communications
Caribbean	North America	C&W Communications
Cayman Islands	Caribbean	C&W Communications
Dominica	Caribbean	C&W Communications
Grenada	Caribbean	C&W Communications
Jamaica	Caribbean	C&W Communications
St. Kitts	Caribbean	C&W Communications
St. Lucia	Caribbean	C&W Communications
St. Vincent	Caribbean	C&W Communications
Anguilla	Caribbean	C&W Communications
Montserrat	Caribbean	C&W Communications
Turks & Caicos	Caribbean	C&W Communications
Indonesia	Asia	TELIN Singapore
Argentina	Central & S America	TIWS
Bolivia	Central & S America	TIWS
Brazil	Central & S America	TIWS
Chile	Central & S America	TIWS
Colombia	Central & S America	TIWS
Ecuador	Central & S America	TIWS
Guatemala	Central & S America	TIWS
Mexico	Central & S America	TIWS
Paraguay	Central & S America	TIWS
Perú	Central & S America	TIWS
Venezuela	Central & S America	TIWS
Angola	Africa	Vodacom Business Africa
Botswana	Africa	Vodacom Business Africa
Cameroon	Africa	Vodacom Business Africa
Cote D'Ivoire (Republic of)	Africa	Vodacom Business Africa
Djibouti	Africa	Vodacom Business Africa
DRC	Africa	Vodacom Business Africa
DRC	Africa	Vodacom Business Africa
Equatorial Guinea	Africa	Vodacom Business Africa
Ghana	Africa	Vodacom Business Africa
Kenya	Africa	Vodacom Business Africa
Kenya	Africa	Vodacom Business Africa
Lesotho	Africa	Vodacom Business Africa
Liberia	Africa	Vodacom Business Africa
Madagascar	Africa	Vodacom Business Africa

Malawi	Africa	Vodacom Business Africa
Mauritius	Africa	Vodacom Business Africa
Mozambique	Africa	Vodacom Business Africa
Namibia	Africa	Vodacom Business Africa
Nigeria	Africa	Vodacom Business Africa
Rwanda	Africa	Vodacom Business Africa
Senegal	Africa	Vodacom Business Africa
South Africa	Africa	Vodacom Business Africa
South Africa	Africa	Vodacom Business Africa
South Africa	Africa	Vodacom Business Africa
South Africa	Africa	Vodacom Business Africa
South Africa	Africa	Vodacom Business Africa
Swaziland	Africa	Vodacom Business Africa
Tanzania	Africa	Vodacom Business Africa
Tanzania	Africa	Vodacom Business Africa
Uganda	Africa	Vodacom Business Africa
Zambia	Africa	Vodacom Business Africa
Zimbabwe	Africa	Vodacom Business Africa
Cameroon	Africa	Vodacom Business Africa
Tanzania	Africa	Vodacom Business Africa
Ghana	Africa	Vodacom Business Africa
India	India	Vodafone India Limited (VIL)
Qatar	Middle East	Vodafone Qatar
Qatar	Middle East	Vodafone Qatar
Qatar	Middle East	Vodafone Qatar

EXTENDED ACCESS GROUP: 3		
Country	Region	Carrier
Angola	Africa	Internet Solutions
Ethiopia	Africa	Internet Solutions
Botswana	Africa	Internet Solutions
Ghana	Africa	Internet Solutions
Kenya	Africa	Internet Solutions
Mauritius	Africa	Internet Solutions
Mozambique	Africa	Internet Solutions
Namibia	Africa	Internet Solutions
Nigeria	Africa	Internet Solutions
South Africa	Africa	Internet Solutions
Tanzania	Africa	Internet Solutions
Uganda	Africa	Internet Solutions
Zambia	Africa	Internet Solutions
Zimbabwe	Africa	Internet Solutions
Guam	Pacific	PCCW
Nepal	South Asia	PCCW
Bangladesh	South Asia	TATA
Nepal	South Asia	TATA
Pakistan	MENA	TATA
Sri Lanka	South Asia	TATA
Kuwait	Middle East	Tawasul
Oman	Middle East	Tawasul
Qatar	Middle East	Tawasul
Saudi Arabia	Middle East	Tawasul
Algeria	Africa	Telecom Italia Sparkle (TIS)
Bosnia	Europe	Telecom Italia Sparkle (TIS)
Croatia	Europe	Telecom Italia Sparkle (TIS)
Cyprus	Europe	Telecom Italia Sparkle (TIS)
Egypt	Africa	Telecom Italia Sparkle (TIS)
KOSOVO	Europe	Telecom Italia Sparkle (TIS)
Libya	Africa	Telecom Italia Sparkle (TIS)
Montenegro	Europe	Telecom Italia Sparkle (TIS)
Morocco	Africa	Telecom Italia Sparkle (TIS)
Serbia	Europe	Telecom Italia Sparkle (TIS)
Slovenia	Europe	Telecom Italia Sparkle (TIS)
Tunisia	Africa	Telecom Italia Sparkle (TIS)
Indonesia	Asia	Telekom Malaysia
Sri Lanka	South Asia	Telekom Malaysia

EXTENDED ACCESS GROUP: REASONABLE ENDEAVOURS		
Country	Region	Carrier
Tanzania	Africa	Bharti Airtel
UAE	Middle East	Bharti Airtel
Uganda	Africa	Bharti Airtel
Zambia	Africa	Bharti Airtel
Zimbabwe	Africa	Bharti Airtel
Algeria	Africa	Orange Business Services (France Telecom International)
Guinea	Africa	Orange Business Services (France Telecom International)
Mauritania	Africa	Orange Business Services (France Telecom International)
Ethiopia	Africa	PCCW
Egypt	Africa	Vodafone Egypt

IP-VPN SERVICE - ROUND TRIP DELAY

Section 1 - IP Backbone Core RTD in Milliseconds (ms)

Round Trip Delay Service Level Objectives between two IP Backbone Core Routers in milliseconds.

The Round Trip Delay Service Level Objectives for the IP Backbone Core is calculated as the applicable IP Backbone Core RTD Target in the tables in Section 1 in this document x 1.2

Row Labels	Argentina - Buenos Aires	Australia - Melbourne	Australia - Perth	Australia - Sydney	Bahrain - Bahrain	Belgium - Brussels	Brazil - Rio de Janeiro	Brazil - Sao Paulo	Canada - Toronto	China - Beijing	China - GuangZhou	China - Shanghai	Czech Republic - Prague	Denmark - Copenhagen	Egypt - Cairo	France - Marseille	France - Paris	Germany - Dusseldorf	Germany - Frankfurt	Germany - Hamburg	Hong Kong - Hong Kong	Hungary - Budapest	India - Bangalore	India - Chennai	India - Delhi	India - Mumbai	Indonesia - Jakarta	Ireland - Dublin	Israel - Rosh Haayin	Italy - Milan	Japan - Osaka	Japan - Tokyo	Korea - Seoul	Kuwait - Kuwait	
Argentina - Buenos Aires		367	406	355	353	227	257	266	158	361	365	341	234	232	269	236	221	224	221	229	362	234	349	353	365	328	385		289	229	311	306	349	353	
Australia - Melbourne	367		42	15	178	272	345	337	224	169	131	156	287	286	312	276	266	278	274	282	128	288	149	121	188	147	103		340	282	136	129	164	182	
Australia - Perth	406	42		54	139	233	385	377	264	121	83	108	248	246	273	237	227	238	235	243	80	249	110	82	148	108	63		301	243	125	117	116	143	
Australia - Sydney	355	15	54		2	191	279	334	327	213	157	118	143	285	283	333	288	278	274	284	279	115	298	159	134	200	160	115		347	292	125	125	151	195
Bahrain - Bahrain	353	178	139	191		151	332	377	233	165	126	153	146	145	182	151	145	137	133	145	126	147	141	128	189	152	105		196	141	166	159	159	43	
Belgium - Brussels	227	272	233	279	151		2	209	224	109	223	188	201	26	24	55	19	9	16	16	20	185	29	145	146	159	120	197		81	23	176	169	209	142
Brazil - Rio de Janeiro	257	345	385	334	332	209			18	139	346	343	324	218	213	250	218	203	205	202	214	340	216	332	333	343	309	378		264	209	290	294	333	335
Brazil - Sao Paulo	266	337	377	327	377	224	18		148	343	336	324	232	230	266	229	229	221	211	228	333	225	356	396	353	321	376	217		285	219	283	288	331	353
Canada - Toronto	158	224	264	213	233	109	139	148		215	223	195	116	114	151	119	103	106	102	111	219	116	231	234	247	209	238		171	110	169	160	202	236	
China - Beijing	361	169	121	157	165	223	346	343	215		41	23	226	225	263	230	222	217	214	221	45	228	139	114	177	137	92		276	222	66	58	81	168	
China - GuangZhou	365	131	83	118	126	188	343	336	223	41		28	190	189	226	194	186	181	177	187	7	191	100	76	139	99	54		239	185	46	63	43	130	
China - Shanghai	341	156	108	143	153	201	324	324	195	23	28		206	204	246	211	201	195	198	199	31	211	118	100	165	124	78		262	205	45	38	68	157	
Czech Republic - Prague	234	287	248	285	146	26	218	232	116	226	190	206		23	65	33	25	20	18	23	188	15	147	149	161	125	213		79	24	180	173	213	149	
Denmark - Copenhagen	232	286	246	283	145	24	213	230	114	225	189	204	23		64	31	24	12	16	21	187	29	145	147	160	123	211		77	23	178	171	211	148	
Egypt - Cairo	269	312	273	333	182	55	250	266	151	263	226	246	65	64		60	50	56	52	67	223	66	185	183	196	158	238		114	59	223	217	255	183	
France - Marseille	236	276	237	288	151	19	218	229	119	230	194	211	33	31	60		2	13	23	19	30	191	34	149	149	163	123	201		82	27	185	178	218	147
France - Paris	221	266	227	278	145	9	203	220	103	222	186	201	25	24	50	13	3	15	12	20	183	26	139	140	154	114	191		74	19	175	168	209	137	
Germany - Dusseldorf	224	278	238	274	137	16	205	221	106	217	181	195	20	12	56	23	15	2	7	12	178	21	137	139	152	115	203		69	15	168	162	202	140	
Germany - Frankfurt	221	274	235	284	133	16	202	211	102	214	177	198	18	16	52	19	12	7	2	16	175	17	133	135	148	111	199		65	11	172	166	206	136	
Germany - Hamburg	229	282	243	279	145	20	214	228	111	221	187	199	23	21	67	30	20	12	16		190	29	145	148	162	123	207		81	23	173	166	207	151	
Hong Kong - Hong Kong	362	128	80	115	126	185	340	333	219	45	7	31	188	187	223	191	183	178	175	190	3	188	97	73	136	96	51		237	183	45	69	40	129	
Hungary - Budapest	234	288	249	298	147	29	216	225	116	228	191	211	15	29	66	34	26	21	17	29	188		147	149	162	125	213		79	25	185	178	220	150	
India - Bangalore	349	149	110	159	141	145	332	356	231	139	100	118	147	145	185	149	139	137	133	145	97	147	5	27	65	29	65		196	140	132	130	133	156	
India - Chennai	353	121	82	134	128	146	333	396	234	114	76	100	149	147	183	149	140	139	135	148	73	149	27	3	70	30	51		204	143	110	102	109	132	
India - Delhi	365	188	148	200	189	159	343	353	247	177	139	165	161	160	196	163	154	152	148	162	136	162	65	70		43	118		210	156	179	169	172	192	
India - Mumbai	328	147	108	160	152	120	309	321	209	137	99	124	125	123	158	123	114	115	111	123	96	125	29	30	43	5	77		173	118	138	128	132	156	
Indonesia - Jakarta	385	103	63	115	105	197	378	376	238	92	54	78	213	211	238	201	191	203	199	207	51	213	65	51	118	77			266	207	89	81	87	109	
Ireland - Dublin							217																												
Israel - Rosh Haayin	289	340	301	347	196	81	264	285	171	276	239	262	79	77	114	82	74	69	65	81	237	79	196	204	210	173	266			73	239	235	274	199	
Italy - Milan	229	282	243	292	141	23	209	219	110	222	185	205	24	23	59	27	19	15	11	23	183	25	140	143	156	118	207		73	2	180	173	217	144	
Japan - Osaka	311	136	125	125	166	176	290	283	169	66	46	45	180	178	223	185	175	168	172	173	45	185	132	110	179	138	89		239	180		10	53	170	
Japan - Tokyo	306	129	117	125	159	169	294	288	160	58	63	38	173	171	217	178	168	162	166	166	69	178	130	102	169	128	81		235	173	10	2	46	166	
Korea - Seoul	349	164	116	151	159	209	333	331	202	81	43	68	213	211	255	218	209	202	206	207	40	220	133	109	172	132	87		274	217	53	46	3	163	
Kuwait - Kuwait	353	182	143	195	43	142	335	353	236	168	130	157	149	148	183	147	137	140	136	151	129	150	156	132	192	156	109		199	144	170	166	163		
Malaysia - Johor Bahru	374	90	51	103	93	187	366	358	177	38	65	202	201	228	191	181	193	189	197	36	203	64	36	102	62	17		255	197	78	70	71	98		
Malaysia - Kuala Lumpur	382	99	61	112	102	194	374	366	236	79	41	66	210	208	234	198	188	200	196	204	38	210	72	48	115	74	24		263	204	86	81	74	105	
Mexico - Mexico City	254	211	250	200	324	196	233	226	112	218	209	199	208	206	238	201	190	197	199	202	207	213	281	272	333	291	244		259	207	156	163	206	326	
Mexico - Monterrey	210	257	297	248	362	149	166	157	88	265	255	245	160	158	189	153	143	149	153	153	253	165	299	318	294	254	295		214	160	203	209	252	290	
Morocco - Rabat	270	326	287	330	201	67	250	266	152	273	242	253	77	75	110	74	64	67	69	71	239	82	198	199	213	175	251		129	76	226	219	259	197	
Netherlands - Amsterdam	224	281	242	278	139	13	207	221	106	219	187	192	18	16	58	24	13	7	11	10	184	23	140	142	154	117	207		80	17	165	159	206	143	
New Zealand - Auckland	333	39	78	27	214	275	312	304	191	182	143	168	287	285	317	280	270	276	280	281	140	292	183	157	223	183	138		339	287	149	142	176	218	
Oman - Wattaya	333	161	122	174	26	126	315	335		148	109	136	129	128	165	132	121	120	115	128	108	130	127	111	172	135	88		179	124	149	142	142	29	
Philippines - Manila	380	121	82	132	123	203	357	349	235	61	23	48	203	202	240	207	199	194	190	202	20	204	95	67	134	93	48		255	198	78	74	57	128	
Poland - Warsaw	242	296	257	300	155	35	223	233		235	199	215	33	32	74	41	34	22	25	32	196	39	155	157	170	133	221		87	33					

Row Labels	Malaysia - Kuala Lumpur	Mexico - Mexico City	Mexico - Monterrey	Morocco - Rabat	Netherlands - Amsterdam	New Zealand - Auckland	Oman - Wattaya	Philippines - Manila	Poland - Warsaw	Romania - Bucharest	Russia - Moscow	Singapore - Singapore	Spain - Barcelona	Spain - Madrid	Sweden - Stockholm	Taiwan - Taipei	Thailand - Bangkok	Thailand - Nonthaburi	Turkey - Istanbul	UAE - Dubai	UK - Bracknell	UK - London	USA - Chicago	USA - Dallas	USA - Los Angeles	USA - New York	USA - San Francisco	Vietnam - Hanoi	Vietnam - Ho Chi Minh
Argentina - Buenos Aires	382	254	210	270	224	333	333	380	242	260	268	373	247	239	240	356	411	411		342	220	214	159	176	208	140	206	381	388
Australia - Melbourne	99	211	257	326	281	39	161	121	296		319	90	293	284	293	161	120	120		171	276	273	215	194	162	231	171	147	140
Australia - Perth	61	250	297	287	242	78	122	82	257		279	51	253	245	254	102	80	81		131	238	234	254	233	201	270	210	99	99
Australia - Sydney	112	200	248	330	278	27	174	132	300		315	103	310	296	303	149	132	133		183	281	277	203	183	150	219	159	136	143
Bahrain - Bahrain	102	324	362	201	139	214	26	123	155	172	183	93	159	158	153	146	121	122		35	156	151	304	308	277	213	286	143	142
Belgium - Brussels	194	196	149	67	13	275	126	203	35	52	57	186	36	27	35	213	221	221		122	19	15	110	118	150	90	158	205	213
Brazil - Rio de Janeiro	374	233	166	250	207	312	315	357	223	241	251	370	228	221	222	358	392	393		324	197	189	140	155	186	121	194	359	366
Brazil - Sao Paolo	366	226	157	266	221	304	335	349	233	260	268	364	237	236	231	353	383	383	265	333	217	211	154	147	179	130	187	353	359
Canada - Toronto	236	112	88	152	106	191		235		142	150	226	128	122	122	209	268	268		224	102	97	12	32	65	21	59	239	245
China - Beijing	79	218	265	273	219	182	148	61	235		256	76	241	240	234	90	97	97		156	222	218	206	201	170	225	159	64	74
China - GuangZhou	41	209	255	242	187	143	109	23	199		227	38	203	204	197	29	60	61		118	194	189	214	192	161	229	169	26	34
China - Shanghai	66	199	245	253	192	168	136	48	215		236	65	224	219	217	70	85	86		143	203	198	186	181	149	205	139	51	59
Czech Republic - Prague	210	208	160	77	18	287	129	203	33	48	61	202	43	43	36	212	236	234		139	28	24	117	130	162	97	169	207	214
Denmark - Copenhagen	208	206	158	75	16	285	128	202	32	47	59	200	41	41	24	210	236	232		137	26	22	115	127	159	95	167	205	213
Egypt - Cairo	234	238	189	110	58	317	165	240	74	91	102	227	78	68	72	251	260	260		163	61	57	152	159	191	132	199	243	249
France - Marseille	198	201	153	74	24	280	132	207	41	59	66	190	40	31	39	215	225	225		126	24	21	120	123	155	100	166	210	217
France - Paris	188	190	143	64	13	270	121	199	34	52	57	182	30	21	31	207	216	216		116	14	11	104	113	145	85	153	202	209
Germany - Dusseldorf	200	197	149	67	7	276	120	194	22	38	50	192	33	34	26	202	228	224		129	17	13	107	119	151	88	158	197	205
Germany - Frankfurt	196	199	153	69	11	280	115	190	25	43	54	191	29	30	22	198	224	220		125	21	17	103	122	154	84	150	193	201
Germany - Hamburg	204	202	153	71	10	281	128	202	32	46	55	197	41	37	34	211	231	228		137	22	17	112	123	155	93	163	203	210
Hong Kong - Hong Kong	38	207	253	239	184	140	108	20	196		225	36	201	201	194	26	57	58		119	192	186	210	189	157	226	166	23	31
Hungary - Budapest	210	213	165	82	23	292	130	204	39	56	67	202	43	44	37	212	238	234		139	34	30	117	135	167	98	164	207	215
India - Bangalore	72	281	299	198	140	183	127	95	155	171	185	63	159	158	153	120	101	102		134	147	143	243	263	233	216	229	117	109
India - Chennai	48	272	318	199	142	157	111	67	157	174	185	39	162	158	156	95	65	68		120	150	146	250	256	224	216	211	92	85
India - Delhi	115	333	294	213	154	223	172	134	170	187	197	105	174	172	168	158	139	139		181	163	159	248	289	286	228	278	156	152
India - Mumbai	74	291	254	175	117	183	135	93	133	150	160	64	137	132	131	118	93	93		144	124	121	210	226	248	191	232	116	111
Indonesia - Jakarta	24	244	295	251	207	138	88	48	221		244	16	218	209	219	73	46	46		98	202	198	229	233	200	248	182	70	67
Ireland - Dublin																													
Israel - Rosh Haayin	263	259	214	129	80	339	179	255	87	105	120	255	92	92	86	268	286	284		188	79	77	172	181	214	152	220	257	269
Italy - Milan	204	207	160	76	17	287	124	198	33	51	61	196	37	38	31	207	232	228		133	28	24	111	129	161	92	158	201	210
Japan - Osaka	86	156	203	226	165	149	149	78	188		210	77	198	193	191	50	95	101		159	176	172	160	140	107	176	115	64	72
Japan - Tokyo	81	163	209	219	159	142	142	74	181		203	71	191	186	185	47	100	101	208	151	170	165	151	145	113	170	104	68	98
Korea - Seoul	74	206	252	259	206	176	142	57	222		243	73	235	226	225	78	93	94		151	210	206	193	188	156	213	147	59	67
Kuwait - Kuwait	105	326	290	197	143	218	29	128	158	176	186	97	162	155	157	149	127	127		38	148	144	308	312	281	217	292	147	145
Malaysia - Johor Bahru	14	230	279	241	190	126		35			234	5	208	199	208	58	34	34		85	192	188	219	215	182	243	193	55	57
Malaysia - Kuala Lumpur	3	240	287	248	204	135	85	45	218		241	13	216	206	216	60	45	45		94	199	196	227	224	192	249	200	58	61
Mexico - Mexico City	240		78	240	195	177	303	225	217	232	239	235	218	209	219	227	260	260		312	191	187	103	83	52	118	139	226	230
Mexico - Monterrey	287	78		192	146	224	271	270	168	183	190	282	171	161	171	274	303	304		267	142	138	89	68	100	70	107	272	279
Morocco - Rabat	248	240	192		66	321	181	256	86	102	108	241	94	81	88	264	275	275		176	62	58	153	162	194	133	203	258	266
Netherlands - Amsterdam	204	195	146	66	3	281	122	203	26	46	47	196	36	31	29	209	231	228		137	14	10	107	116	148	87	156	203	211
New Zealand - Auckland	135	177	224	321	281	4	197	157	296		317	126	297	288	298	174	155	156		206	270	265	182	161	129	197	138	160	168
Oman - Wattaya	85	303	271	181	122	197		106		155	166	76	142	139	135	129	104	105		19	132	128	287	291	260	196	269	126	125
Philippines - Manila	45	225	270	256	203	157	106	3	212		241	35	217	217	211	44	65	65		116	208	204	226	206	174	243	183	40	52
Poland - Warsaw	218	217	168	86	26	296		212		57	70	210	51	51	44	217	246	242		147	37	33	125	138	170	106	174	215	223
Romania - Bucharest		232	183	102	46		155		57		85		69	69	62						52	48	143	153	185	123	193		
Russia - Moscow	241	239	190	108	47	317	166	241	70	85		233	79	74	73	248	268	265		175	58	56	151	160	192	131	199	243	251
Singapore - Singapore	13	235	282	241	196	126	76	35	210		233	4	207	198	208	60	34	34		85	191	188	217	221	189	242	195	57	53
Spain - Barcelona	216	218	171	94	36	297	142	217	51	69	79	207		13	49	225	243	240		151	42	38	130	140	172	110	176	219	227
Spain - Madrid	206	209	161	81	31	288	139	217	51	69	74	198	13	2	49	225	234	234		134	32	29	123	131	163	102	171	220	227
Sweden - Stockholm	216	219	171	88	29	298	135	211	44	62	73	208	49	49	2	218	244	240		145	39	36	123	141	172	103	170	213	220
Taiwan - Taipei	60	227	274	264	209	174	129	44	217		248	60	225	225	218	3	79	80		137	215	210	200	212	180	218	171	46	53
Thailand - Bangkok	45	260	303	275	231	155	104	65	246		268	34	243	234	244	79		3		116	226	222	259	242	210	275	215	77	81
Thailand - Nonthaburi	45	260	304	275	228	156	105	65	242		265	34	240	234	240	80	3			116									

IP Backbone Core RTD in Milliseconds (ms) - Africa

RTD Matrix	Angola	Botswana	Ivory Coast	Cameroon	Djibouti	DRC	Ghana	Equatorial Guinea	Kenya	Lesotho	Mauritius	Madagascar	Mozambique	South Africa	Malawi	Namibia	Nigeria	Senegal	Swaziland	Tanzania	Uganda	Zambia	Zimbabwe	UK
Angola		90	270	390	360	270	270	360	255	225	140	150	95	80	145	120	220	290	130	250	270	110	90	170
Botswana			310	380	190	130	300	400	90	40	70	85	40	20	100	60	120	330	80	75	105	55	45	210
Ivory Coast				280	390	310	220	300	305	315	350	365	330	300	350	325	220	230	370	280	300	340	320	110
Cameroon					460	390	130	370	375	385	410	410	380	370	420	395	150	300	420	340	390	390	380	180
Djibouti						380	390	510	115	190	230	255	160	175	230	225	335	440	230	120	130	215	195	325
DRC							325	410	280	140	160	170	125	125	220	155	315	340	160	340	310	170	145	220
Ghana								310	240	230	270	280	245	125	270	260	30	240	265	290	255	155	235	115
Equatorial Guinea									400	410	450	460	440	400	450	420	310	325	450	395	415	430	410	200
Kenya										90	130	135	60	75	170	125	230	335	125	30	30	120	100	220
Lesotho											70	80	45	30	110	65	120	335	105	75	110	60	45	210
Mauritius												120	75	55	140	95	150	375	120	115	145	95	70	250
Madagascar													130	95	155	160	210	440	180	150	175	145	105	260
Mozambique														40	95	70	125	370	80	65	80	60	45	270
South Africa															70	55	105	320	50	65	95	50	30	195
Malawi																115	200	405	155	135	165	105	90	275
Namibia																	130	345	120	120	140	85	60	220
Nigeria																		240	150	280	270	140	120	115
Senegal																			380	325	340	350	340	130
Swaziland																				120	175	90	105	270
Tanzania																					45	105	80	200
Uganda																						130	115	225
Zambia																							60	240
Zimbabwe																								215
UK																								

IP Backbone Core RTD in Milliseconds (ms) – UK

Row Labels	UK - Aberdeen	UK - Addlestone	UK - Bedford	UK - Birmingham	UK - Bracknell	UK - Brighton	UK - Bristol	UK - Edinburgh	UK - Glasgow	UK - Inverness	UK - Leeds	UK - Livingston	UK - London	UK - Manchester	UK - Milton Keynes	UK - Newcastle	UK - Sheffield	UK - Swindon	UK - Tingley	UK - Warrington	UK - Watford
UK - Aberdeen	3	24	20	18	24	23	29	7	22	14	28	10	23	16	24	18	17	19	16	15	19
UK - Addlestone	24		16	10	13	16	16	19	23	22	14	18	15	13	20	16	13	12	13	12	
UK - Bedford	20	16		10	8	6	14	11	20	18	20	12	8	9	7	9	8	7	8	8	3
UK - Birmingham	18	10	10	4	7	10	10	12	20	16	14	12	8	6	15	9	7	6	6	6	8
UK - Bracknell	24	13	8	7	3	7	10	16	17	22	17	17	5	13	12	15	13	4	10	11	5
UK - Brighton	23	16	6	10	7		13	15	17	22	20	18	7	12	11	13	12	7	9	11	4
UK - Bristol	29	16	14	10	10	13	10	20	23	24	20	20	11	17	18	17	16	9	14	18	9
UK - Edinburgh	7	19	11	12	16	15	20		13	9	18	3	17	10	16	10	8	14	7	10	11
UK - Glasgow	22	23	20	20	17	17	23	13	16	20	27	17	18	11	23	14	13	17	11	10	14
UK - Inverness	14	22	18	16	22	22	24	9	20		26	9	21	14	22	16	15	17	14	14	18
UK - Leeds	28	14	20	14	17	20	20	18	27	26	18	22	18	17	24	19	17	16	16	16	7
UK - Livingston	10	18	12	12	17	18	20	3	17	9	22		17	10	16	10	9	13	10	10	14
UK - London	23	15	8	8	5	7	11	17	18	21	18	17	6	11	11	14	13	6	11	11	3
UK - Manchester	16	13	9	6	13	12	17	10	11	14	17	10	11	3	13	7	6	8	4	4	8
UK - Milton Keynes	24	20	7	15	12	11	18	16	23	22	24	16	11	13		14	12	11	12	13	7
UK - Newcastle	18	16	9	9	15	13	17	10	14	16	19	10	14	7	14		6	11	6	7	9
UK - Sheffield	17	13	8	7	13	12	16	8	13	15	17	9	13	6	12	6		9	3	5	7
UK - Swindon	19	12	7	6	4	7	9	14	17	17	16	13	6	8	11	11	9		8	7	5
UK - Tingley	16	13	8	6	10	9	14	7	11	14	16	10	11	4	12	6	3	8		4	6
UK - Warrington	15	12	8	6	11	11	18	10	10	14	16	10	11	4	13	7	5	7	4		7
UK - Watford	19		3	8	5	4	9	11	14	18	7	14	3	8	7	9	7	5	6	7	

Section 2 – Round Trip Delay Service Level Objectives– Extended Access

The following Service Level Objectives are indicative only.

1. Round Trip Delays in Milliseconds (ms) for Cable & Wireless Communications (Caribbean):

	Antigua	Barbados	BVI	Cayman	Dominica	Grenada	Jamaica	St. Kitts	St. Lucia	Miami NNI	NY NNI
Antigua		8	5	52	3	12	59	8	5	28	58
Barbados	13		13	60	8	17	68	17	3	36	66
BVI	5	13		47	8	17	53	4	10	23	53
Cayman	52	60	47		55	64	54	50	57	23	53
Dominica	3	11	8	55		9	8	11	7	31	61
Grenada	12	20	17	64	9		63	20	8	40	70
Jamaica	58	68	53	8	63	70		57	63	30	60
St. Kitts	8	17	3	50	11	20	57		13	27	56
St. Lucia	5	13	10	57	8	7	63	13		33	63
Miami NNI	28	37	24	24	32	41	32	28	33		30
NY NNI	59	65	53	54	62	71	63	56	63	30	

2. Round Trip Delays in Milliseconds (ms) for Telefonica (Latin America):

	Bogota	Buenos Aires	Lima	Miami NNI	Mexico	Sao Paulo	Chile	London NNI
Bogota		265	184	108	166	264	237	270
Buenos Aires	265		110	187	261	50	57	332
Lima	184	110		101	171	165	59	249
Miami NNI	108	187	101		73	163	144	59
Mexico	166	261	171	73		237	333	188
Sao Paulo	264	50	165	163	237		105	308
Chile	237	57	59	144	333	105		297
London NNI	270	332	249	59	188	308	297	

3. Round Trip Delay in Milliseconds (ms) for China Telecom (China)

	East China	Central China	West China
East China	120	200	320
Central China	200	200	320
West China	320	320	320

4. Round Trip Delay in Milliseconds (ms) for Telekom (Malaysia)

	Malaysia	Singapore	Indonesia	Hong Kong	Egypt	Bahrain	London	New York	Los Angeles	Sri Lanka
Malaysia		25	40	60	170	170	250	310	250	85
Singapore	25		50	80	180	180	250	310	250	95
Indonesia	40	50		90	200	200	270	340	280	105
Hong Kong	60	80	90		230	230	300	370	270	130
Egypt	170	180	200	230		180	410	480	380	250
Bahrain	170	180	200	230	180		410	480	380	250
London	250	250	270	300	410	410		90	170	300
New York	310	310	340	370	480	480	90		90	370
Los Angeles	250	250	280	270	380	380	170	90		270
Sri Lanka	85	95	105	130	250	250	300	370	270	

5. Round Trip Delay in Milliseconds (ms) for Batelco (Middle East)

Region	Real time	Mission critical	Standard data
Gulf region	<=35 ms	<=40 ms	<=50 ms
Middle East region	<=45 ms	<=50 ms	<=55 ms

6. Round Trip Delay in Milliseconds (ms) for other carriers

Carrier	Countries	Round Trip Delay
Telecom Italia Sparkle (Italy)	Italy	60 ms
Softbank Telecom (Japan)	Intra-Japan	35 ms
Telus (Canada)	Intra-Canada:	70 ms
	Canada-NY & LA NNIs	120ms
Tawasul (Middle East)	Between Kuwait; Oman; Qatar; & Saudi Arabia	60ms

7. Vodafone will make available to the Customer Extended Access RTD Service Level Objectives for countries not listed in this document upon request.

1. Structure. These Extra Service Terms form part of the Service Terms for the IP-VPN Services when Customer orders the Vodafone IP-VPN Cloud Connect Optional Service Element. If there is a conflict between them, these Extra Service Terms will supersede the IP-VPN Service Terms, but only for Vodafone IP-VPN Cloud Connect Service.

2. Service Terms.

2.1 Vodafone IP-VPN Cloud Connect Service Summary.

Vodafone IP-VPN Cloud Connect provides private connectivity to the Cloud Provider Data Centre directly from the IP-VPN Network rather than from the public internet. Cloud Connect is a managed service, including ordering, support, escalations, and Incident management. Reporting is not included. It provides consistent, committed bandwidth at rates from 50Mbps to 1Gbps allowing Network capacity to scale as required. Vodafone IP-VPN Cloud Connect allows Customer to connect its IP-VPN Network with the following Cloud Providers: Vodafone, Microsoft Azure, Amazon Web Services, and HPE Helion.

2.2 Cloud Provider, location, bandwidth and Peering type(s) are listed on the Customer HLD or Order.

2.3 Conditions of Use.

2.3.1 Cloud Service. Customer must purchase Cloud Service from a Cloud Provider under separate agreement. To the maximum extent permitted by Applicable Law, Vodafone excludes all liability for any Cloud Service under the Customer Agreement. Customer may only operate one Cloud Provider on a single Customer VRF instance. A change to the VRF instance will incur a new activation Charge.

2.3.2 Cloud Service Access. Customer must: (a) provide Vodafone with the unique Cloud Provider customer identifier and/or service key that Customer obtains from the Cloud Provider; (b) obtain and maintain all necessary permissions from the Cloud Provider (including any service component such as Peering); and (c) get permission from Microsoft if Customer wants access to Office 365 when using Microsoft Azure Cloud Services.

2.4 Peering: Customer is responsible for supplying private IP addresses to Vodafone for Peering configuration. Private Peering is available with all Third Party Cloud Providers. Vodafone will provide public IP addresses as required.

2.5 Extended Access Limitation. Vodafone IP-VPN Cloud Connect Service is not available to Customer Sites using IP-VPN Extended Access, Microsoft "Microsoft" Peering, and Amazon Web Services Public Peering. Vodafone must conduct a network assessment, at Customer's expense, to properly configure Vodafone IP-VPN Cloud Connect to prevent access at Customer Sites using IP-VPN Extended Access when applicable.

2.6 Amazon IP-VPN Route Limit. IP-VPN routes advertised by the customer into Amazon Web Services customer environment are limited to 100. If Customer wants to add more IP-VPN routes after reaching the limit, Customer must request Vodafone to update route summarization for the new routes using the Service Request process.

2.7 Microsoft Express Route Premium Add On. Customer must notify Vodafone 30 days in advance if Customer intends to use Microsoft Premium Add On so that Vodafone may check and

increase the VPN limits as necessary. Incidents caused by Customer using Microsoft Premium Add On before VPN limits have been increased when required are Excluded Events.

3. Support and Service Levels

3.1 The IP-VPN Support Services and Service Levels apply to Vodafone IP-VPN Cloud Connect except as amended below. For the avoidance of doubt, the Support and Service Levels do not apply to any Cloud Service or cloud network equipment.

3.2 Support Services. If Customer reports an Incident to both a Third Party Cloud Provider and Vodafone resulting in no Incident found with both the Third Party Cloud Provider and Vodafone, Customer shall co-ordinate a meeting with both Vodafone and the Third Party Cloud Provider to further investigate the Incident.

3.3 Service Availability. The Percentage Availability of the Vodafone IP-VPN Cloud Connect Service will be measured as the percentage of time the Vodafone IP-VPN Cloud Connect Service is available at each Cloud Provider Demarcation Point in a Monthly Measurement Period. In the calculation and definitions for IP-VPN Service Availability, "Customer Site" is replaced with "Cloud Provider Data Centre" for the Cloud Connect Service only.

3.4 Service Credits

3.4.1 Delay. Customer is entitled to a Service Credit if the Service Commencement Date of a new connection to a Cloud Provider Data Centre, or a configuration change to a connection to an existing Cloud Provider Data Centre is delayed beyond the Agreed Delivery Date. In the Service Credits for Delay table, "Customer Site" is replaced with "Cloud Provider Data Centre" for the Cloud Connect Service.

3.4.2 Availability. The Availability Service Credit in the IP-VPN Service Levels is calculated based on a percentage of the monthly recurring port Charge for the Vodafone IP-VPN Cloud Connect connection to the Cloud Provider Data Centre. In the Service Credit table for Availability of IP-VPN Service, "Customer Site" is replaced with "Cloud Provider Data Centre" for the Vodafone IP-VPN Cloud Connect Service.

4. Definitions. The following definitions apply to these Extra Service Terms in addition to the definitions contained in the rest of the Customer Agreement:

4.1 Cloud Provider Data Centre means the Cloud Provider's data centre location for the provision of Cloud Services to Customer.

4.2 Cloud Provider Demarcation Point means is the cross-connect in the meet-me room at the Cloud Provider Data Centre.

4.3 Cloud Service means the cloud service purchased by Customer from a Cloud Provider under separate agreement.

4.4 Cloud Providers means Vodafone, Microsoft Azure, Amazon Web Services, and HPE Helion.

4.5 Peering is defined by the Cloud Provider.

4.6 Third Party Cloud Provider means a Cloud Provider other than Vodafone.

4.7 Virtual routing and forwarding (VRF) is a technology included in IP (Internet Protocol) network routers that allows multiple instances of a routing table to exist in a router and work simultaneously. This increases functionality by allowing network paths to be segmented without using multiple devices.

**EXTRA SERVICE TERMS FOR
VODAFONE ENHANCED NETWORK BASED INTERNET ACCESS (ENHANCED NBIA)
SECURE NETWORK GATEWAY (FIREWALL & INTRUSION DETECTION) (SNG) AND
ENHANCED SECURE REMOTE USER ACCESS (ENHANCED SRUA)**

1. Structure. These Extra Service Terms form part of the Services Terms for the IP-VPN Services when Customer orders Vodafone Enhanced NBIA, Secure Network Gateway (SNG) and/or Enhanced Secure Remote User Access Optional Service Elements. If there is a conflict between them, these Extra Service Terms will supersede the IP-VPN Service Terms, but only for the relevant Optional Service Element.

2. Service Terms

2.1 Enhanced Network Based Internet Access (Enhanced NBIA)

2.1.1 Enhanced NBIA Service Summary: Enhanced NBIA provides Internet Access centrally via a network based internet access gateway to a customer IP-VPN. It allows Customer to aggregate internet access from multiple IP-VPN connected locations to geographically dispersed NBIA gateways, bringing advantages such as deployment of optional but centralised security policy enforcement. Enhanced NBIA is available with symmetric bandwidths ranging from 1Mbps through to 1Gbps. A secondary gateway can be provisioned for geographical diversity / resiliency purposes if required.

2.1.2 Conditions of Use: Customer's use of Enhanced NBIA is limited to the following countries at time of contracting. Customer may request an updated list from time to time from account management.

Vodafone Licenced Countries		
Austria	Hong Kong	Portugal
Australia	Hungary	Russia
Belgium	Italy	Singapore
Canada	Ireland (Republic of)	South Korea
Czech Republic	Japan	Spain
Bulgaria	Luxembourg	Sweden
Denmark	Malaysia	Switzerland
Finland	Mexico	Ukraine
France	Netherlands	UK
Germany	Norway	USA

2.2 Secure Network Gateway (SNG)

2.2.1 SNG Service Summary: SNG is ordered with Enhanced NBIA. Customer may order a range of firewall and security features under the Standard and Premium packages set out below. SNG Service includes a network based firewall facility. If ordered, Vodafone will consult with Customer to capture preferred security rules and configuration requirements.

(a) The following Standard and Premium feature sets are available:

Items	Standard	Premium
Inbound/outbound ruleset	Up to 50	Up to 1000
Application reporting	Yes – SSL Certificate Inspection	Yes - deep cloud app inspection and Full SSL Inspection
Firewall event/logs	6 month retention	12 month retention
Reports frequency	weekly/monthly	Daily/weekly/monthly

(b) Additional options for Intrusion Detection and Prevention are set out below:

Items	Standard	Premium
Policy protection	Default	Customisable
Threat detection via SSL	No	Yes
Anomaly based detection	No	Yes - with tuning support
Intrusion Detection / Protection logs	6 month retention	12 month retention
Reports frequency	weekly/monthly	Daily/weekly/monthly

2.2.2 Conditions of Use: Vodafone will implement firewall policies in accordance with Customer's specification. Vodafone is not liable for any adverse consequences resulting from outdated or

inaccurate policy information provided to Vodafone by Customer. While SNG Service is designed to prevent outsiders from gaining access to the IP-VPN and provides an effective method of monitoring and limiting access, it may not prevent some instances of unauthorised access to the IP-VPN. No system can claim to be completely secure. Vodafone accepts no liability for any adverse consequences to Customer arising as a result of the SNG Service's failure to prevent unauthorized access.

2.3 Enhanced Secure Remote User Access (Enhanced SRUA)

2.3.1 Enhanced SRUA Service Summary: Enhanced SRUA allows remote users to connect more securely to the IP-VPN network over the Internet using IP-Sec or SSL encryption.

2.3.2 The following authentication options are available to the Customer:

- (a) Regular authentication (1 Factor Authentication) based on username/password authentication only; and
- (b) Strong authentication (2 Factor Authentication) where each user requires a soft token, SIM based token or Hard Token in addition to username/password for authentication.

2.3.3 Standard or Premium option feature sets are set out below:

Features	Standard	Premium
Host Check	No - not available	Yes - optional
SSL VPN	Yes - optional Up to 3 portals	Yes - optional Up to 6 portals
Integration with Customer authentication server	Up to 3 servers	Up to 5 servers
Reporting	Weekly/Monthly Default reports only	Daily/Weekly/Monthly Default and Custom reports
Log Retention	6 months	12 months

2.3.4 Conditions of Use:

(a) Vodafone will provide Customer with the ability to log in to a VPN session reporting tool. Customer must regularly check the end user sessions and notify Vodafone immediately in the event of any unusual or suspicious records.

(b) Vodafone will supply and support a client for VPN access. If Customer uses a different client, Vodafone is not responsible for support of or Service Levels for Enhanced SRUA.

3. Support and Service Levels

3.1 The IP-VPN Service Support and Service Levels do not apply to Enhanced NBIA, SNG, & Enhanced SRUA Service. The following Service Levels apply to Enhanced NBIA, SNG, & Enhanced SRUA Service. No Service Credits apply to Enhanced NBIA, SNG, & Enhanced SRUA Service Levels. The Service Levels do not apply to Incidents caused by or connected to an Excluded Event.

3.2 Support Service for Enhanced NBIA, SNG, & Enhanced SRUA

3.2.1 Customer must report Priority Level 1 or 2 Incidents via telephone to the Customer Services Centre; otherwise, the Incident will be downgraded to a Priority Level 3.

3.2.2 Priority Levels for Enhanced NBIA, SNG, and Enhanced SRUA are set out below:

Priority Level	Priority Level definitions
1	A critical fault, resulting in the majority of Users unable to use the Service.
2	A fault resulting in multiple Users unable to use the Service
3	Customer reports repeated quality problems, intermittent faults, or degraded Service. No major service impacts.
4	Customer reports non-Service or business impacting issue.

3.3 Service Levels

3.3.1 Availability:

(a) **Calculation:** Percentage Availability is calculated as: $[(A - B)/A] \times 100$. "A" equals the number of whole minutes in the Monthly Measurement Period. "B" equals the number of whole minutes that the Service is Unavailable in the Monthly Measurement Period.

“Unavailable” or “Unavailability” means data cannot be transported through the applicable Service Demarcation Point for Enhanced NBIA, Enhanced SRUA, and/or SNG Services for reasons other than Excluded Events.

(b) **Service Levels.**

	Single PoP location	Geographic Resilience
Percentage Availability	99.9%	99.99%

3.3.2 Incident resolution times

(a) Incident Resolution Time is calculated as the number of whole hours between the time Vodafone issues a Unique Identifier and the time Vodafone issues a Closure Notification for the Incident.

Priority Level	Target Incident Resolution Time
1	4 hours
2	4 hours
3	24 hours
4	72 hours

3.3.3 Change Request Definitions

(a) The following definitions apply to Change Requests for configuration changes:

Change Request Type	Definition
Standard	Pre-approved configuration changes that are considered relatively low risk, straight forward, and repetitive in nature.
Routine	Configuration changes that are non-trivial and not classified as an emergency change or standard change in this table.
Emergency	An urgent change that is necessary to address or prevent a Priority Level 1 or 2 Incident or when there is another urgent need such as a legal requirement or other business requirement.

(b) **Change Request Service Levels**

Change Request Type	Target change implementation times	Target resolution reinvestigation times		Fair Usage Policy	
		Under 5 working days after change	5 working days and over after change	Standard Service Tier	Premium Service Tier
Standard	1 Working Day (24 hours)	4 Working Hours	5 Working Days	3 change requests per month	5 change requests per month
Routine	3 Working Days (72 hours)	4 Working Hours	5 Working Days	2 change requests per month	4 change requests per month
Emergency	4 hours	4 Working Hours	5 Working Days	1 change requests per month	1 change requests per month

(c) Target change implementation times are calculated as the number of whole Working Days or Working Hours (as applicable) that the Service Commencement Date for the configuration change occurs beyond the Agreed Delivery Date.

(d) Target resolution reinvestigation times: (a) only apply if the original configuration change has been implemented incorrectly by Vodafone; and (b) do not apply if Customer has provided Vodafone with incorrect or incomplete information.

(e) Target resolution reinvestigation times are calculated as the number of whole Working Days or Working Hours (as applicable) that the correct implementation of the configuration change occurs beyond the date that Customer notifies Vodafone via the Customer Services Centre that the configuration change has been incorrectly implemented by Vodafone.

(f) After the initial three months from the Service Commencement Date, Vodafone may charge Customer for Change Requests made outside the of the Fair Usage Policy limits.

4. Definitions

The following definitions apply to these Extra Service Terms in addition to the definitions contained in the rest of the Customer Agreement:

4.1 Gateways means the PoP location(s) identified in the Customer Agreement.

4.2 Service Demarcation Point depends on the Service package and other options selected in the Order as follows: (a) the port between the Router and the Customer Network for the Managed Service package; (b) the service interface of the access circuit for the Wires Only Service package; (c) the NTE when access is provided using Ethernet technology for the Wires Only Service package; (d) the egress point from the Secure Network Gateway to the internet for Secure Network Gateway; and (e) the ingress point from the internet to the Secure Network Gateway for the Enhanced Secure Remote User Access Service Element.

EXTRA SERVICE TERMS FOR VODAFONE IP-VPN ONLINE PORTAL SERVICE

1. Structure. These Extra Service Terms form part of the Service Terms for the IP-VPN Service when Customer orders the Vodafone IP-VPN Online Portal Optional Service Element. If there is a conflict between them, these Extra Service Terms will supersede the IP-VPN Service Terms, but only for Vodafone IP-VPN Online Portal Optional Service Element.

2. Service Terms

2.1 Vodafone IP-VPN Online Portal Service Summary. Vodafone IP-VPN Online Portal Service is a Global WAN dashboard that includes: Incident visibility and reporting; geographic maps with service, network and configuration details; Planned Works notifications; network performance reporting; user guides, user profile management and e-billing.

2.2 User Logins. Customer may order up to 5 User logins as part of the IP-VPN Online Portal.

2.3 Conditions of Use.

2.3.1 IP-VPN Online Portal reports are not used in the operation or measurement of Vodafone's Service Levels for the IP-VPN Service.

2.3.2 If the IP-VPN Online Portal is not used by Customer for 6 months or more (e.g., no Customer login is used), Vodafone may suspend the IP-VPN Online Portal.

3. Support and Service Levels

3.1 The IP-VPN Service Support and Service Levels do not apply to the Vodafone IP-VPN Online Portal.

3.2 Service Delivery

3.2.1 Vodafone will use reasonable endeavours to provide the IP-VPN Online Portal within 10 Working Days of the Service Commencement Date of the IP-VPN Services at the second Customer Site.

3.2.2 Vodafone will use reasonable endeavours to provision a configuration change within 10 Working Days of Vodafone's acceptance of the Order.

3.3 Incident Resolution:

3.3.1 Calculation: Incident Resolution Time for Online Performance Reporting is calculated as the number of hours (or Working Days for Priority 4 Incidents) between the time Vodafone provides a Unique Identifier and the time Vodafone issues a Closure Notification for the Incident.

3.3.2 SLO's and Priority Levels: Target Incident Resolution Service Level Objectives and Priority Level Examples are set out below:

Priority Level	Priority Level Examples	Service Level Objective
1 & 2	Total loss of Service (unable to access the reporting system)	6 hours
3	Degradation of Service (limited access to reports)	12 hours
4	Data integrity Incidents within the online reports	5 Working Days

3.3.3 The SLO for Incident Resolution will not apply if there is a total loss of hardware and the Incident will be resolved on a reasonable endeavours basis. If there is a total loss in Service or degradation of Service, Vodafone cannot guarantee that Customer reporting data will be retained.

3.4 Round Trip Delay

Using IP-VPN Online Portal Service, IP-VPN RTD (for all CoSs) will be measured by sending 10 test packets of 64 bytes between each pair of locations every 5 minutes. The average RTD performance for all samples recorded each Monthly Measurement Period will be used to indicate the actual RTD achieved in that month.

3.5 Service Credits. Service Credits in the IP-VPN Service Terms do not apply to Vodafone IP-VPN Online Portal Service.

4. Definitions

The following definitions apply to these Extra Service Terms in addition to the definitions contained in the rest of the Customer Agreement:

4.1 Working Days means Monday to Friday inclusive, but excluding public holidays in the UK.

**EXTRA SERVICE TERMS FOR
VODAFONE RIVERBED OPTIMISATION (VRO) SERVICE**

1. Structure. These Extra Service Terms form part of the Service Terms for the IP-VPN Service when Customer orders the Vodafone Riverbed Optimisation Optional Service Element. If there is a conflict between them, these Extra Service Terms will supersede the IP-VPN Service Terms, but only for the Riverbed Optimisation (VRO) Optional Service Element.

2. Service Terms

2.1 Vodafone Riverbed Optimisation ("VRO") Service Summary. VRO is an optional service designed to reduce latency and bandwidth constraints in delivering applications to multiple locations across long distances. Customer may order VRO Service under Managed and Maintained Service packages. Optional service elements include the Riverbed Steelhead (Device), Riverbed Virtual Steelhead, Riverbed Steelhead Mobile, Riverbed Steelhead Cloud, Riverbed Steelhead SaaS, and Riverbed Steelhead Interceptor.

2.2 Managed Service means VRO Service provided with proactive monitoring and reporting (includes maintenance). Managed Service allows Vodafone to access the VRO Service and all Riverbed Equipment remotely to determine the nature of the Incident.

2.3 Maintained Service means VRO Service with reactive response service to Incidents. For Maintained Service Vodafone will not have remote access to the VRO Service and Riverbed Equipment so Customer may need to:

2.3.1 provide Vodafone with all required system logs retrievable via the console interface before replacement Riverbed Equipment will be despatched to Customer's Site; and/or

2.3.2 install, at Customer's cost, a dedicated RS232 terminal device, per Riverbed Equipment, for remote troubleshooting purposes.

2.4 Conditions of Use.

2.4.1 VRO Service is delivered using a Third Party Provider. Customer agrees to comply with the third party terms set out at:

<https://www.riverbed.com/document/fpo/Riverbed+End+User+License+Agreement+7-13.pdf>

2.5 Customer is responsible for management and maintenance of any Equipment connected to the internal interface of the Riverbed SteelHead Device, LAN and or services that run over the LAN (e.g. laptops, tablet devices, printers, video conferencing). Vodafone's responsibility for VRO Service ends at the external interface of the Riverbed SteelHead Device.

3. Support and Service Levels

3.1 The IP-VPN Service Support and Service Levels apply to VRO Service except as amended below.

3.2 Service Levels

3.2.1 Service Levels for Service Availability and Incident Resolution are only available for Managed VRO Service. Service Levels for Service Availability and Incident Resolution for Maintained VRO Service are on a reasonable endeavours basis. Service Levels do not apply in the following countries due to import/export issues: Afghanistan, Bosnia & Herzegovina, DR Congo, Ethiopia, Iran, Iraq, Liberia, North Korea, Pakistan, Somalia, Sudan, Syria, Russia, Rwanda, Yemen, and Zimbabwe.

3.2.2 **Service Availability.** The Service Level Objective for Availability only applies to the Riverbed SteelHead Device for Managed Service.

Description	% Service Availability, annually
The time the Riverbed SteelHead Device is available for use	99.5%

3.2.3 **Priority of Incidents and Incident Resolution.** The following Priority Levels and target Incident resolution times apply:

Priority Level	Priority Level examples	Target Incident resolution time
1	A total loss of Service at one or more Customer Sites.	4 hours
2	A partial loss of Service that has a significant detrimental effect on the Customer's ability to perform normal communications	8 hours
3	A degradation in Service performance or a Priority Level 1 or Priority Level 2 Incident where	15 hours

	Vodafone has either been: (a) denied access to a Customer Site; or (b) is unable to complete Planned Works; in order to restore normal service for reasons outside Vodafone's reasonable control	
4	A non-Service affecting event or an event not classified as Priority Level 1, 2 or 3 Incident	7 Days

(a) **Calculation:** Incident resolution time will be calculated as the number of whole hours between the time Vodafone issues a Unique Identifier and the time Vodafone issues a Closure Notification for the Incident.

(b) **Riverbed Equipment Faults.** If remote testing reveals that the Riverbed Equipment must be replaced, the Incident will be closed and Vodafone will provide Customer with an Agreed Delivery Date for replacement Riverbed Equipment. If remote testing is not available, a Customer Site visit may be required to establish if the Riverbed Equipment is at fault and needs replacement. Replacement Riverbed Equipment will not be provided on demand, but only after testing has determined the nature of the fault.

3.2.4 Start Up Services

Description	Service Level Objective
Delivery of detailed build plan	Within 7 Working Days of agreed Order

3.2.5 Reporting

Description	Service Level Objective
Service Management will coordinate a quarterly review and discussion of VRO Service performance	Within 10 Working Days of the end of each 3-month period from the Service Commencement Date

3.2.6 **Service Degradation:** The Service Levels for Service Degradation in the IP-VPN Service Terms do not apply to VRO Service.

4. Service Credits

4.1 Service Credits for Start Up Service, Service Availability, Incident Resolution, Reporting, and Service Degradation do not apply to VRO Service.

4.2 Service Credits for delay

4.2.1 Customer is entitled to a Service Credit if the Service Commencement Date of a new Service Element at a Customer Site or the delivery of replacement Riverbed Equipment is delayed beyond the Agreed Delivery Date.

4.2.2 Vodafone is not responsible for delays caused by governmental authorities regarding customs' clearance for Riverbed Equipment.

Description	Number of whole Working Days beyond Agreed Delivery Date	Service Credit
Delay in in Service Commencement Date of new Service Element:	1 to 10 days	5% of the installation Charge
	11 to 20 days	20% of the installation Charge
	>20 days	25% of the installation Charge
Delay in delivery of replacement Riverbed Equipment	1 to 10 days	5% of the site annual maintenance charge
	>10 days	20% of the site annual maintenance charge
Customer may only claim a Service Credit for the highest applicable time period category, not each time period that may pass for the same Incident.		

4.2.3 The installation Charge referenced above is Vodafone's standard installation Charge excluding additional charges due to specific Customer Site requirements, such as additional construction charges.

5. Definitions

The following definition applies to these Extra Service Terms in addition to the definitions contained in the rest of the Customer Agreement:

5.1 Riverbed Equipment means the Equipment from Riverbed used to deliver VRO that includes Riverbed SteelHead Device. Riverbed Equipment is Customer Equipment if Customer purchases it from Vodafone and is Vodafone Equipment if not.

EXTRA SERVICE TERMS FOR VODAFONE UNIVERSAL CPE ("UCPE") SERVICE

1. Structure. These Extra Service Terms form part of the Service Terms for the IP-VPN Service when Customer orders the Universal CPE ("uCPE") Optional Service Element. If there is a conflict between them, these Extra Service Terms will supersede the IP-VPN Service Terms, but only for the uCPE Optional Service Element.

1. Service Terms

1.1 Universal CPE ("uCPE") Service Summary: uCPE Service includes Maintenance of uCPE Equipment (as defined below). uCPE Equipment facilitates routing of network traffic in addition to other capabilities. It also provides a foundation for future software defined network functionality. The uCPE Equipment connects the Customer Site to the IP-VPN Service.

1.2 Vodafone will support, maintain, upgrade and/or replace Equipment as required for uCPE Service performance ("**Maintenance**"). Vodafone will provide Customer with as much advance notice as possible of any Maintenance activities that will require Customer cooperation or access to a Customer Site. Customer agrees to cooperate with Vodafone in its performance of Maintenance. If Customer fails to do so, Vodafone is not responsible for Service performance related to Equipment that requires Maintenance.

2. Equipment

2.1 uCPE Service requires Customer to use Equipment manufactured by Juniper Networks ("**uCPE Equipment**"). Customer may purchase or use Vodafone provided uCPE Equipment. The Equipment Terms in apply to the uCPE Equipment, found at <http://www.vodafone.com/business/vgegeneralterms..>

3. Conditions of Use

3.1 Customer is responsible for management and maintenance of any Equipment connected to the internal interface of the uCPE. Vodafone's responsibility for IP-VPN Service utilising uCPE ends at the external interface of the uCPE Equipment.

3.2 uCPE Equipment requires a dedicated 5Mbps of bandwidth to support management traffic at each Customer Site.

4. Support and Service Levels

4.1 The IP-VPN Service Support and Service Levels apply to the uCPE Service Element.

5. General

5.1 These Extra Service Terms apply to the uCPE Service and capability made available by Vodafone as at the date of the Customer Agreement. Additional terms and conditions may apply to the provision of additional features or capabilities available with this Service Element after such date.

1. Structure. These Extra Service Terms form part of the Service Terms for the IP-VPN Service when Customer orders the Vodafone Satellite Access Optional Service Element. If there is a conflict between them, these Extra Service Terms will supersede the IP-VPN Service Terms, but only for the Satellite Access Optional Service Element.

2. Service Terms

2.1 Satellite Access Service Summary. Satellite Access connectivity provides a flexible access solution for the delivery of integrated IP-VPN Services to remote Customer Sites in hard-to-access locations. Integration is provided by Vodafone's ground support partners and Vodafone operational teams responsible for the global IP-VPN Network. Satellite Access Service allows the use of a Very Small Aperture Terminal ("VSAT") to deliver voice, data, corporate IP-VPN, internet access, CCTV, video, audio, telemetry and other services. It is delivered in three configurations: uncontended, dedicated contended, and shared contended.

2.2 Conditions of Use.

2.3 Availability. Satellite Access Service is subject to regulatory approval and availability in the relevant territory of installation. Charges and timescales for Satellite Access vary dramatically depending on Applicable Law and technical specification of the Satellite Access Services.

2.4 Licences. Where required in a territory: (a) Vodafone will arrange a satellite communications licence in the name of and on behalf of the Customer (or local Customer Group Company as applicable) where reasonably possible; and (b) Customer will provide Vodafone with cooperation and information in the licencing process and must pay any licence fees directly to the relevant licencing agency.

2.5 Equipment. Vodafone supplies, installs, maintains and manages the Satellite Access Equipment. The Equipment Terms apply to the sale of Satellite Access Equipment except that when Vodafone supplies Satellite Access Equipment to Customer from outside the country of delivery, Equipment will be shipped CIF (Incoterms 2010). Customer must clear the Satellite Access Equipment through customs and pay applicable customs duties as required.

3. Support and Service Levels

3.1 The IP-VPN Service Support and Service Levels do not apply to Satellite Access Service. Customer may call the IP-VPN Customer Service Centre for Support Services. The terms in this section are provided for informational purposes only.

3.2 Incident response and resolution times. Incident response and resolution times for Satellite Access Service vary depending on the location of the affected remote Customer Site.

3.3 Service Availability. Percentage Availability is calculated as: $[(A - B)/A] \times 100$. "A" equals 43800 minutes each month. "B" equals the number of whole minutes during which the Service is Unavailable in the Monthly Measurement Period.

Service Type	% Service Availability	Minutes Unavailable
Corporate – Standard (when secondary circuit is delivered over VSAT)	99.16%	368 minutes

3.4 Service Degradation

3.4.1 Data rates. Typical data rates on existing Vodafone Satellite Access networks are between 64Kbps and 200Mbps per Customer Site.

3.4.2 Bit Error Rate (BER) and availability. Vodafone will typically design Satellite Access links with a minimum BER of 1×10^{-8} and an availability of 99.8% annually. Links may be designed for improved performance on request.

3.4.3 Round Trip Delay. A Satellite Access link will introduce around 250ms delay to round trip delay Service Level Objectives due to the path length to and from the satellite in each direction of a duplex circuit. Round trip delay for contended Satellite Access will vary depending on the levels of traffic and congestion. Round trip delay Service Level Objectives for Satellite Access include the satellite path length in each direction, packet serialisation and buffering in the router and satellite modem at each end of the satellite link, but excludes terrestrial backhaul from the hub earth station to HQ Customer Site.

4. Definitions

The following definitions apply to these Extra Service Terms in addition to the definitions contained in the rest of the Customer Agreement:

4.1 CIF means "cost, insurance freight" in accordance with the International Chamber of Commerce's Incoterms 2010.