Service Specific Terms

Ethernet VPN and Ethernet Wireline Service



Enterprise Customers

1. The Service – Overview

1.1 The Vodafone Ethernet VPN and Vodafone Ethernet Wireline services ("EVPN" and "EWS" respectively) are independent solutions that provide high-speed connectivity between Customer Sites via the Vodafone MPLS Core Network, combining the benefits of Ethernet and MPLS. The term "Service" or "Services" in these Service Specific Term means either or both of EVPN and EWS as selected by/for the Customer in the Commercial Terms and/or Order.

2. Service Term Structure

- 2.1 These Service Specific Terms include:
 - (a) the service specification, which sets out a description of the Service, including optional Service Elements, complementary Services (where applicable), and which may be updated from time to time (the "Service Specification"). The specific Service Elements selected by Customer will be set out in the Commercial Terms and/or Order;
 - (b) the service levels, which set out the standards that will be applied to the provision of the Service (in addition to the standards set out in the Tiered Support Service Specific Terms) (the "Service Levels"); and
 - (c) the Coverage Bands and Frame Delay service degradation information, which sets out a non-binding description of available Coverage Bands and target Frame Delay service levels.
- 2.2 The following documents further govern Vodafone's supply of the Service and form part of the Agreement, applying in the order of precedence set out in the General Terms:
 - (a) the Commercial Terms;
 - (b) the General Terms;
 - (c) the Fixed Service Terms set out at www.vodafone.co.uk/terms;
 - (d) the Order, which confirms the Service Elements selected by/for Customer;
 - (e) the Tiered Support Service Specific Terms set out at www.vodafone.co.uk/terms; and
 - (f) any applicable policies and guidelines, as provided from time to time by Vodafone.

3. The Service and Equipment

- 3.1 EVPN is a Virtual Private LAN Service (VPLS) and EWS is a Virtual Private Wire Service (VPWS). Each Service provides high-speed connectivity between two or more Customer Sites in a point-to-point or point to multipoint fashion and enables network sites (which could be in geographically diverse locations) to communicate with each other as if they were directly attached to each other.
- The Service comprises required core Service Elements and may also include optional Service Elements selected by Customer both of which shall be set out in the Commercial Terms and/or Order.
- 3.3 Fixed Equipment relevant to this Service may include Network Termination Equipment. The Commercial Terms and/or Order will identify which Fixed Equipment, if any, Vodafone will supply to the Customer and which of such Equipment will be purchased by Customer. Associated Charges shall be set out in the Commercial Terms and/or Order.
- 3.4 **Coverage Bands:** Vodafone may, on a case by case basis, determine if the Service is available in any of the locations in the Coverage Bands. If Vodafone is able and willing to provide the Service in any of the locations in the Coverage Bands, then prior to relevant Order being placed, it must be confirmed in writing between the Parties.

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Ethernet VPN and Ethernet Wireline Service



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4. Service Specific Conditions of Use

4.1 Ethernet access

- (a) The following limitations apply to any Customer Sites connected to the Vodafone MPLS Core Network by a third party Ethernet access circuit using Ethernet technology:
 - (i) Vodafone will use reasonable endeavours to procure Access Circuits which offer similar performance to the targets set out in the Service Levels section]; however, due to the wide range of technology solutions used in the market to offer Ethernet Access Circuits, Vodafone does not guarantee a minimum specification of third party Access Circuit.
 - (ii) Any minimum requirements for Access Circuits (for example, a minimum MTU) shall be set out in the Order and/or a statement of work.
- (b) 100Mbps Ethernet access circuit bandwidths may be reduced by 3Mbps in some circumstances, due to the underlying technology used to deliver the Service.
- (c) As is standard practice for data services, the experienced throughput of the EVPN/EWL may vary from the stated CIR, PIR, EIR or Access Circuit speed due to packet overheads.

4.2 **FTTC:** In the case of FTTC Access Circuits in the UK:

- (a) The following terms apply to UK, FTTC Access Circuits:
 - (i) The Access Circuit bandwidth available in both the downstream and upstream directions is subject to the length and quality of the copper circuit employed between the Customer's premises and the BT Openreach street cabinet.
 - (ii) The Access Circuit bandwidth available is subject to the Prioritisation Rate applied by BT Openreach.
 - (iii) If the EVC bandwidth is greater than the available Access Circuit bandwidth then Ethernet frames may be dropped.

4.3 **FTTP:** In the case of FTTP Access Circuits in the UK:

- (a) The following terms apply to UK, FTTP Access Circuits:
 - (i) The Access Circuit bandwidth available in both the downstream and upstream directions is subject to the restrictions imposed by BT Openreach on FTTP which may include (but is not limited to) the Prioritisation Rate applied by BT Openreach.
 - (ii) If the EVC bandwidth is greater than the available Access Circuit bandwidth then Ethernet frames may be dropped.
- 4.4 **Data throughput:** The experienced throughput of the Service may vary from the stated CIR, PIR, EIR or Access Circuit speed due to the packet overheads.
- 4.5 **Secondary EVC:** If the Customer orders a secondary EVC, and such EVC is used other than set out in the Service Specification, Customer shall pay Vodafone the undiscounted Charges for such secondary EVC from the date of misuse.
- 4.6 **PSTN Connection:** Customer shall not (and shall ensure that Users shall not) connect or seek to connect the Services to the PSTN otherwise than in accordance with Applicable Law.
- 4.7 **Regulated Items:** The export and/or import of certain Equipment (including, without limitation, Equipment where Ethernet access is provided) ("**Regulated Items"**) are subject to domestic and/or foreign government export and/or import laws, rules, policies, procedures, restrictions and regulations ("**Export/Import Controls"**). Customer represents and warrants the following for Regulated Items: (i) Customer will export, import and/or disclose them only in strict compliance with applicable Export/Import Controls; and (ii) Customer will not try in any manner to evade US or any other jurisdiction's export controls on encryption. Customer acknowledges that the Export/Import Controls may include a complete prohibition on the export, re-export, import and/or use of a Regulated Item in certain jurisdictions thereby precluding the use of the Service in these jurisdictions.

Service Specific Terms

Ethernet VPN and Ethernet Wireline Service



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4.8 **Third Party Provider:** Where required by Applicable Law, the Services may be provided in a given country by a Third Party Provider which has the necessary authority to provide the Services. Customer shall be aware that in certain geographic locations, Vodafone will provide the Services through the use of a local Third Party Provider.

5. Service Change Request Procedure

- 5.1 Any Configuration Change [that is not a Normal Change] to the Service shall be subject to the following service change request procedure ("Service Change Request Procedure"):
 - (a) If either Party wishes to propose a change, it shall notify the other Party of that fact by sending a written request to the other Party's account manager/representative or via the Vodafone customer portal (if applicable), specifying in as much detail as is reasonably practicable the nature of the requested change.
 - (b) As soon as reasonably practicable after sending or receiving a written request for a change, Vodafone shall provide the Customer with a brief written proposal in relation to the relevant change (a "Change Control Proposal") including, where applicable, the following information: (i) details of the proposed change and its impact on the Service including, without limitation, any changes to the Service, Service Levels and any other variations to the Service Specific Terms; (ii) a statement of the cost and expense of implementation and on-going operation of the relevant change, including any alteration of the Charges or additional Charges relating to the proposed change; (iii) a timetable for the implementation of the change; and (iv) details of the impact, if any, of the proposed change on any existing Services.
 - (c) The Customer shall review Vodafone's Change Control Proposal as soon as reasonably practicable and will either accept or reject the proposed Change Control Proposal. If the Parties agree with the proposed Change Control Proposal, they shall issue an amendment to the Service Specific Terms authorising the change in the form of a change Order.
 - (d) If it is necessary to use additional resources or to incur any other additional costs in making a change, they shall be calculated as a change to the Charges. Vodafone shall have no obligation to commence work in connection with any change until a relevant change Order authorising a change is executed by the Parties in writing.
 - (e) Where a new Customer Site is added via the Service Change Request Procedure or where a Configuration Change to an existing Customer Site has been approved via the Service Change Request Procedure, Vodafone will notify the Customer of specific requirements at the Customer Sites.



Service Specification
Enterprise Customers

[NOTE: SERVICE SPECIFICATION IS AVAILABLE ON REQUEST]

Service Levels



Enterprise Customers

1. Incident Management

- 1.1 An Incident shall be deemed to: (i) commence when Acknowledged by Vodafone; and (ii) end when Vodafone advises Incident resolution. The Customer will be deemed to have been advised if Vodafone has made reasonable attempts to contact the Customer.
- 1.2 It may be necessary for a temporary interruption to the Service from time to time for Vodafone to carry out essential maintenance or network upgrades to the Service and/or equipment (an "Outage" or "Outages"). Vodafone will use reasonable endeavours to minimise the number of Outages and any subsequent disruption to the Customer. The Customer is responsible for notifying its Users, customers or third party providers of any Outage. Any planned downtime shall not be included in Incident or circuit availability measurements.
- 1.3 Incidents may be reported at any time; however, Incident resolution will only occur during Working Hours.

2. Severity Levels

A description of the different Severity Levels is set out below:

Severity Level	Severity Level Definition
0	Vodafone MPLS Core Network node or route failure affecting multiple Vodafone customers.
1	A total loss of the Service at one Customer Site or multiple Customer Sites.
2	Partial loss of the Service (at one Customer Site or multiple Customer Sites) which has a significant detrimental effect on the Customer's ability to perform normal communications but which does not represent a total loss of the Service.
3	Degradation of the Service performance (for example, a low number of Users affected with minimum impact) or a Severity Level 0, 1, or 2 Incident downgraded in accordance with clause 5.3 of these Service Levels.
4	A non-Service affecting Incident or Incidents not classed as a Severity Level 0, 1, 2, or 3 Incident, including Incidents with performance reporting.

3. Service Levels

3.1 **Availability**

- (a) Service Level Measure:
 - (i) The availability of the Service will be measured as the percentage of time the Ethernet Virtual Circuit between Customer Sites is available in an Annual Measurement Period. The measurement of Unavailability only applies where the Service is unavailable due to a Severity Level 0, Severity Level 1 or Severity Level 2 Incident.
 - (ii) The Service Levels set out in this clause 3 shall only apply to those Customer Sites located in a Coverage Band and directly connected to the Vodafone MPLS Core Network, and shall apply from the most recent Service Commencement Date for the relevant EVC.
- (b) **Calculation:** The percentage ("P") Service availability will be calculated as follows: $P = (A B \times 100\%) / A$. Where:
 - (i) "A" equals the number of whole minutes in the relevant Annual Measurement Period;
 - (ii) "B" equals the number of whole minutes during which the Service is Unavailable in the Annual Measurement Period, excluding time where the Service is Unavailable due to an Excluded Event; an EVC or Access Circuit Regrade or Severity Level 3 or Severity Level 4 Incident; and
 - (iii) "Unavailable" or "Unavailability" means the Ethernet Virtual Circuit cannot transmit data in one or both directions as a result of an Incident.





Enterprise Customers

(c) **Availability Target:** The availability targets shall vary depending on the specific Coverage Band unless an EVC is provided in the UK using an EFM, FTTC/FTTP or Fibre, then the availability target for that access type shall apply as set out below:

U	JK access typ	е	Coverage Band									
EFM	FTTC/FTTP	Fibre	Α	В	С	D						
99.8%	99.8%	99.87%	99.85%	99.6%	99.4%	99.0%						

32 Incident Resolution Times

- (a) This Service Level and associated Service Credits only apply to those Customer Sites located in a Coverage Band.
- (b) Calculation: The Incident resolution time (for each Coverage Band or access type) shall be calculated as the number of whole hours between the time Vodafone Acknowledges a Severity Level 0, 1 or 2 Incident and the time Vodafone confirms to the Customer that the Incident is resolved. The Customer will be deemed to have been advised if Vodafone has made reasonable attempts to contact the Customer. The Incident resolution times do not apply to Incidents caused by or associated with an Excluded Event. The percentage calculation of Target Incident Resolution Time is based on the Incidents logged by Vodafone within the Annual Measurement Period.
- (c) The target Incident resolution times set out in the table below shall apply to the Coverage Bands and access types (for the UK only), and are applicable to each Access Circuit at a Customer Site:

Acces	ss Type		Coverage Band										
UK Fibre Access	UK EFM or UK FTTC/FTTP	A	В	С	D								
5 hours	7 hours	4 hours	6 hours	12 hours	24 hours								

3.3 **Service Degradation**

- (a) Service degradation service levels set out an expectation of the average performance between the MPLS switches located within the Vodafone MPLS Core Network nodes under normal working conditions.
- (b) The Service degradation Service Levels: (a) only apply to traffic within CIR and not to any traffic bursting beyond the CIR; and (b) apply from the most recent Service Commencement Date for the relevant Customer Site.
- (c) The Service degradation Service Levels do not apply: (a) to Severity Level 1 or 2 Incidents; and/or (b) where the Incident is due to an Excluded Event;
- (d) The Service degradation Service Level is measured between the MPLS switches located within the Vodafone MPLS Core Network nodes.
- (e) **Service degradation Service Levels:** The Service degradation Service Level will be measured by determining whether the relevant Service degradation targets set out below have been met:
 - (i) Frame Delay (latency performance)
 - (A) **"Frame Delay"** is the time taken by an Ethernet frame to be transmitted across the Vodafone MPLS Core Network, and is measured as an average round trip value for an Ethernet frame between the ingress and egress MPLS switches located with the Vodafone MPLS Core Network nodes.
 - (B) Frame Delay performance may vary from time to time as a result of resilience mechanisms aimed at maximising end-to-end service availability which are present on the global meshed Vodafone MPLS Core Network.
 - (C) The target Service degradation Service Levels for Frame Delay are set out in the section "Coverage Bands and Frame Delay Service Degradation" to these Service Specific Terms.

Service Levels



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(ii) Frame Delay Variation

- (A) **"Frame Delay Variation"** is the variation of the inter-Frame Delay and will be measured as the absolute variance between the Frame Delay seen on individual Ethernet frames and the average Frame Delay between the ingress and egress MPLS switches located within the Vodafone MPLS Core Network.
- (B) The Frame Delay Variation target Service Level for circuits routes across the Vodafone MPLS Core Network is:

CoS	Target
Premium CoS	5 milliseconds

(C) There is no Frame Delay Variation Service Level target for Enhanced CoS or Standard CoS.

(iii) Frame Loss

- (A) **"Frame Loss"** is the percentage of Ethernet frames lost between MPLS switches located within the Vodafone MPLS Core Network.
- (B) The Service degradation Frame Loss target Service Levels for circuits routed across the Vodafone MPLS Core Network are:

CoS	Target
Premium CoS	0.04%
Enhanced CoS and Standard CoS	0.06%

4. Service Credits

4.1 **General**

- (a) Service Credits will only be payable in respect of the Annual Measurement Period if the Services fall below the applicable target for that period.
- (b) The Customer must claim all Service Credits via the Vodafone account manager within 30 days of the end of the applicable Annual Measurement Period or one month review period. Any Service Credits will be applied to the Customer's next bill after agreement that such Service Credits are due.
- (c) Service Credits as set out in these Service Specific Terms shall be the Customer's sole and exclusive remedy against Vodafone in respect of any failure in Service performance even where Vodafone is made aware of the likely loss incurred by the Customer for such failure; provided, however, that the Customer may have the right to terminate for material breach under the terms of the Agreement.
- (d) Vodafone shall not be liable for any failure of the Services to meet the specified Service Levels to the extent that such failure is due to the Customer Site access not being granted, or any other act or omission by the Customer which prevents Vodafone from performing the Services, or is a direct result of any interruptions or maintenance activities agreed with the Customer.
- (e) If one Incident causes a failure of two or more Service Levels, only the greater Service Credit amount of the two Service Levels shall be payable.
- (f) The maximum cumulative Service Credits applicable in any one calendar month shall not exceed 100% of the total monthly Recurring Charges payable by the Customer for the affected EVC or Access Circuit.
- (g) Vodafone shall not be liable for any Service Credits for any failure or delay in performing any of Vodafone's obligations under the Agreement that arise out of, or in connection with: (a) intermittent Incidents which do not prevent the use of the Services; (b) performance reporting; or (c) an Excluded Event.

4.2 **Service Credit for Delay**

Service Levels



Enterprise Customers

(a) The Customer shall be entitled to a Service Credit if the Service Commencement Date in respect of a Customer Site is delayed past the Agreed Delivery Date, or a Configuration Change to a circuit at an existing Customer Site, due to an act or omission of Vodafone, calculated in accordance with the following table:

Number of Working Days	Service Credit (% of the Installation Charge / Regrade Charge)
1 to 5	5%
6 to 10	10%
11 to 15	15%
16 to 20	20%
>20	25%

- (b) For each EVC, where there are at least two Service Demarcation Points, the Service credit shall be calculated based on the Working Days past the Agreed Delivery Date for the last Customer Site of the two Service Demarcation Points to be installed.
- (c) Vodafone's total liability for Service Credits for delay shall not exceed:
 - (i) for delay of the Service Commencement Date, past the Agreed Delivery Date, for a new Customer Site: 25% Installation Charge for the Customer Site; and
 - (ii) for delay of the Service Commencement Date, past the Agreed Delivery Date, for a Configuration to a Customer Site: 25% of the Regrade Charge for the affected circuit.
- (d) For the purposes of this clause 4.2, the Installation Charge excludes any additional Charges due to specific Customer Site requirements (for example, additional construction Charges).

4.3 Service Credit for Incident Resolution Times

(a) Customer may claim a Service Credit for a Severity Level 0, 1 or 2 Incident which has not been resolved within the mean target Incident Resolution Time set out in clause 3.2 above. The maximum Service Credits payable in any monthly review period are listed below:

Number of Incidents in a one month review period not resolved in the mean target Incident Resolution Time	Reduction of Monthly Recurring Charge for the affected EVC per one month review period
1	10%
2	25%
3	35%
4 or more	50%

(b) Vodafone's total liability for Service Credits for Incident resolution in an Annual Measurement Period shall not exceed 25% of the annual Recurring Charge for the relevant affected EVC.

4.4 Service Credit for Service degradation

Where an Incident arises because the average Frame Delay, Frame Delay Variation or Frame Loss has not met the Service degradation Service Levels set out in clause 3.3(e) above, Customer may claim a Service Credit calculated as 20% of the pro-rata Monthly Recurring Charge for the affected EVC for the period that the applicable Service degradation Service Level has not been met for that EVC. The period during which the targets are not met shall be measured from the date Vodafone Acknowledges an Incident for a Service degradation Service Level failure to the date that the Service falls within the affected Service degradation Service Level.

Service Levels



Enterprise Customers

(a) Vodafone's total liability for Service Credits for a failure to meet Service degradation Service Levels for Frame Delay, Frame Delay Variation and Frame Loss in a single calendar month shall not exceed 20% of the Recurring Charges for the affected EVC.

4.5 Service Credit for availability

(a) Customer may claim a Service Credit for an individual EVC where the availability of the Service falls below the targets set out in in clause 3 above at the end of each Annual Measurement Period as follows:

% of Availability below target	Service Credit (percentage of 12 x Monthly Recurring Charge for the affected EVC)
>0%-0.1%	3%
>0.1-0.2%	5%
>0.2-0.35%	10%
>0.35%	15%



Coverage Bands and Frame Delay Service Degradation

Enterprise Customers

1. General

- 1.1 The Frame Delay Service Level guidance set out in clause 3 of this section is subject to change by Vodafone from time to time. The Frame Delay target Service Levels do not constitute a formal offer for Services within a geography.
- 1.2 The Customer shall request from Vodafone current availability prior to submitting any Order for Services to Vodafone.
- 1.3 The Frame Delay target Service Levels and guidance set out in this Annex are expressed as an average round-trip delay.

2. Coverage Bands

2.1 The Coverage Bands shall include the locations in the table below. Vodafone may on a case by case basis determine if the Service is available in any of the locations. If Vodafone is able and willing to provide the Service in any of these locations, then prior to the relevant Order being placed, it must be confirmed in writing by Vodafone to Customer.

UK	Α	В	С	D	Reasonable Endeavours
All UK & NI locations with the exclusion of: The Isle of Man Guernsey Jersey & the Channel Islands	Australia (Melbourne, Sydney, Perth, Adelaide, Brisbane) Belgium Czech Republic Denmark France Hong Kong Hungary Japan Luxembourg Netherlands Poland Singapore South Korea (Seoul & Busan) Spain Switzerland Taiwan	Albania Austria Belarus Bosnia Bulgaria China (Beijing, Shanghai, Guangzhou, Shen Zhen) Croatia Cyprus Finland Georgia Germany Greece India Indonesia (Jakarta) Ireland Italy Lithuania Lithuania Macedonia Malaysia (KL) Moldova Montenegro New Zealand (Auckland)	Australia (other) Bahrain Bermuda Canada Channel Isles China (other) Estonia Malaysia (other) Norway Thailand (other) Vietnam (other)	Azerbaijan Bangladesh Belarus Brunei Cambodia Indonesia (other) Isle of Man Kazakhstan Laos Latvia Mongolia Myanmar New Caledonia New Zealand (other) Pakistan Papua New Guinea Russia (other) South Africa South Korea (other) Sri Lanka UAE Ukraine	Angola Cameroon Côte d'Ivoire Egypt Ghana Iran Jordan Kenya Kuwait Kyrgyzstan Madagascar Mauritius Mozambique Nigeria Oman Qatar Saudi Arabia Senegal Tanzania Turks & Caicos



Coverage Bands and Frame Delay Service Degradation

Enterprise Customers

I	1	
Philippines		
Portugal		
Romania		
Russia		
Russia (Moscow)		
Serbia		
Slovakia		
Slovenia		
Sweden		
Thailand (Bangkok)		
Turkey		
Ukraine		
USA		
Vietnam (Ho Chi Minh & Hanoi)		

3. Frame Delay Target Service Levels

3.1 The Frame Delay target Service Levels for circuits routed across the Vodafone MPLS Core Network are:

	Region	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	Asia	EU	EU	E	EU	E	E	EU	EU	EU	EU	EU	E	E	India	Middle East	Middle East	UK & Ireland	UK & Ireland E	North America	North America
Region	Country	Australia	China	Indonesia	Japan	Malaysia	New Zealand	Phillippines	Singapore	South Korea	Taiwan	Thailand	Vietnam	Belgium	Czech Republic	Denmark	France	Germany	Hungary	Italy	Netherlands	Poland	Russia	Spain	Sweden	Switzerland	India	Bahrain	UAE	Republic of Ireland	England, Scotland & Wales	Bermuda	USA
Asia Asia	Australia China	116 206	206 88	152 124	166 85	159 122	133 208	178 105	143 115	199 97	190 87	175 138	198 133	347 300	358 292	353 306	337 304	351 303	370 304	360 294	341 294	366 300	402 336	343 310	363 316	353 287	232 205	244 207	260 233	353 319	352 314	362 325	337 300
Asia	Indonesia	151	124	5	98	61	150	66	20	113	103	77	88	231	247	241	236	239	259	249	229	255	291	242	251	242	111	132	139	249	244	342	317
Asia	Japan	166	85	98	9	102	184	84	90	77	66	123	135	278	286	286	282	283	295	283	282	290	325	291	296	281	181	199	209	288	284	259	234
Asia Asia	Malaysia New Zealand	159 133	208	61 150	102	44 183	183	61 187	52 142	202	101	73 199	80 210	236 345	238 362	247 354	241 352	244 351	250 371	240 361	235 348	246 367	282 402	247 358	257 364	233 355	142 233	144 262	170 261	264 354	259 355	344 326	319 301
Asia	Phillippines	178	105	66	84	61	187	27	56	94	80	83	103	241	252	254	246	251	261	245	250	256	291	252	264	243	146	159	174	271	270	329	304
Asia	Singapore	143	115	20	90	52	142	56	6	104 69	93	68	79	223 289	239	233	228	231	251	241	221	247	283	234	243	234 276	104	124 196	132 222	241 304	236	333	308 292
Asia Asia	South Korea Taiwan	199 190	87	102	66	101	191	80	93	76	76 59	116	122 111	278	281 270	295 284	293 283	292 281	293 282	283 272	283 272	289 278	325 314	299 289	305 294	265	194 183	185	211	294	303 293	317 306	292
Asia	Thailand	175	138	77	120	73	199	81	68	127	116	61	97	253	255	263	258	260	267	257	251	263	299	264	273	250	158	160	186	281	276	361	336
Asia EU	Vietnam Belgium	198 347	133 300	88 231	135	80 236	210 345	103 241	79 223	122 289	111 278	97 253	69 266	266 5	274 44	277 35	273 38	274 36	286 56	276 46	265 23	282 52	318 88	279 41	287 45	269 39	169 225	184 184	197 193	284 53	283 48	375 233	350 226
EU	Czech Republic	356	292	247	286	238	362	252	239	281	270	255	274	44	33	53	59	51	50	49	44	42	79	65	63	43	243	205	217	73	70	250	243
EU	Denmark	353	306	241	286	247	354	254	233	295	284	263	277	35	53	5	55	42	65	57	25	61	97	61	10	55	231	190	203	63	58	239	232
EU EU	France Germany	337 350	304 303	236 239	282 283	241 244	352 350	246 251	228 231	293 292	283 281	258 260	273 274	38 36	59 51	55 42	32 52	52 39	67 62	45 54	49 36	62 58	98 94	51 58	65 52	38 52	232 230	194 192	212 204	72 64	67 59	246 237	237 230
EU	Hungary	373	304	259	295	250	371	261	251	293	282	268	286	56	50	65	67	62	41	58	56	49	84	73	75	55	255	217	229	85	82	262	255
EU	Italy	360	294	249	283	240	362	245	241	283	272	257	276	46	49	57	45	54	58	5	51	53	88	63	67	30	245	207	219	75	72	252	245
EU EU	Netherlands Poland	341 366	294 300	229 255	282 290	235 246	348 366	250 256	221 247	283 289	272 278	251 264	265 282	23 52	44 42	25 61	49 62	36 58	56 49	51 53	15 52	52 36	88 77	55 69	35 71	44 51	219 251	178 213	194 225	54 81	49 78	227 258	220 251
EU	Russia	407	336	291	325	282	404	291	283	325	314	299	318	88	79	97	98	94	84	88	88	77	72	105	107	87	287	249	261	117	114	294	287
EU	Spain	343	310	242	291	247	358	252	234	299	289	264	279	41	65	61	51	58	73	63	55	69	105	27	71	56	238	200	214	74	69	252	244
EU EU	Sweden Switzerland	363 353	316 287	251 242	296 281	257 233	364 355	264 243	243 234	305 276	294 265	273 250	287 269	45 39	63 43	10 55	65 38	52 52	75 55	67 30	35 44	71 51	107 87	71 56	65	65 5	241 238	200 200	213 212	73 72	68 67	249 245	242 238
India	India	213	168	78	148	105	200	109	71	157	146	121	132	213	234	219	223	221	246	236	209	242	278	229	229	229	66	175	186	223	218	358	333
Middle East	Bahrain	244	207	134	199	144	263	159	124	196	185	160	185	184	205	190	194	192	217	207	178	213	249	200	200	200	212	8	36	194	189	367	356
Middle East UK & Ireland	UAE Republic of Ireland	260 353	233 319	139	209	170 264	261 354	271	132	222	211	186	197 284	193 53	217 73	203 63	212 72	204 64	229 85	219 75	194 54	225 81	261 117	214 74	213 73	212 72	219	36 194	12 203	203	198 38	383 239	372 232
UK & Ireland	England, Scotland & Wales	352	314	244	284	259	353	270	236	303	293	276	283	48	70	58	67	59	82	72	49	78	114	69	68	67	230	189	198	38	31	238	231
North America	Bermuda	362	325	342	259	344	326	329	333	317	306	363	375	233	250	239	246	237	262	252	227	258	294	252	249	245	376	367	383	239	238	8	184
North America	USA	337	300	317	234	319	301	304	308	292	281	338	350	226	243	232	237	230	255	245	220	251	287	244	242	238	351	356	372	232	231	184	159

The following tables provide guidance for the expected day-to-day Frame Delay performance between switches on the Vodafone MPLS Core Network:



Coverage Bands and Frame Delay Service Degradation

Enterprise Customers

(a) Global to Asia Guidance

Country	Pop	Melbourne	Perth	Sydney	Beijing	Guangzhou	Hong Kong	Shanghai	Jakarta	Osaka	Tokyo	Kuala Lumpur	Manilla	Singapore	Seoul	Taipei	Bangkok	Nonthaburi	Hanoi	Ho Chi Minh
Australia	Melbourne	0	53	19	189	160	158	171	124	160	156	125	155	113	177	173	151	147	177	164
Australia Australia	Perth Sydney	53 19	0 71	70 8	148 190	107 177	107 155	141 177	71 128	152 146	148 143	72 143	102 173	60 119	145 186	125 170	98 168	94 164	129 185	112 183
China	Beijing	189	148	190	0	41	55	25	106	71	68	97	77	95	93	74	109	113	77	107
China China	Guangzhou Hong Kong	160 158	107 107	177 157	41 55	0 17	17 8	35 48	64 59	70 70	70 74	55 52	36 34	54 50	52 52	33 33	68 64	71 68	36 36	66 66
China	Shanghai	171	141	177	25	35	48	0	99	48	45	90	70	89	80	67	102	106	70	100
Indonesia Japan	Jakarta Osaka	124 160	71 152	128 143	106 71	64 70	57 70	99 48	0 100	100 0	98 8	31 97	61 85	21 90	103 58	84 53	55 114	52 117	87 92	70 122
Japan	Tokyo	156	148	139	68	70	74	45	98	8	0	100	82	89	54	49	117	120	95	125
Japan	Yokahama	160	152	143	71	72 55	75 50	48	96	11	8	103	82	86	58	46	122	123	99	129
Phillippine	Kuala Lumpur «Manilla	129 158	76 106	146 173	97 77	55 36	52 34	90 70	34 63	100 85	103 82	8 59	59 8	25 53	93 74	74 54	54 84	51 81	77 58	75 87
Singapore	Singapore, TSD	116	63	119	95	54	50	89	21	93	90	22	49	8	92	72	45	41	76	62
South Kor Taiwan	r∈Seoul Taipei	180 173	145 129	186 173	93 77	52 36	52 36	83 70	104 87	61 53	58 49	93 77	74 58	92 76	8 74	70 8	106 90	109 93	74 58	104 87
Thailand	Bangkok	151	98	168	109	68	61	102	55	124	125	51	84	45	106	86	0	8	90	97
Thailand Vietnam	Nonthaburi Hanoi	147 177	94 129	164 184	113 77	71 36	64 36	106 70	52 87	117 92	120 95	47 77	77 58	41 76	109 74	90 54	8 90	0 93	93 0	93 31
Vietnam	Ho Chi Minh	164	112	182	107	66	66	100	70	122	125	71	94	59	104	84	97	93	31	0
Belgium	Brussells	333	284	324	302	261	236	296	242	278	279	237	246	231	299	279	262	259	272	283
Czech Re Denmark	Copenhagen	351 339	301 301	340 334	290 309	248 268	248 251	283 302	259 257	301 289	298 286	252 254	266 254	248 247	286 306	267 286	263 279	266 276	270 287	280 292
France	Marseille	340	289	343	309	268	240	302	246	285	282	242	252	236	306	286	267	263	276	288
France Germany	Paris Dusseldorf	327 336	274 298	327 333	294 306	253 265	227 248	288 299	231 254	272 287	269 284	227 251	239 252	221 244	291 302	271 283	252 276	248 273	263 284	273 289
Germany	Frankfurt	338	286	326	275	233	233	268	244	278	275	239	234	233	271	252	250	253	255	254
Germany	Hamburg	335 363	297 315	328 351	305 304	263 262	247 262	298 297	253 273	280 306	281 303	250 264	248 271	243 262	301 300	282 281	275 275	271 278	283 284	288 285
Hungary Italy	Budapest Milan	353	304	341	292	251	251	285	261	293	290	254	249	251	289	269	265	268	273	269
	dAmsterdam	327	288	332	296	254	244	289	245	293	290	240	258	235	292	273	266	262	275	280
Poland Russia	Warsaw Moscow	359 395	311 352	344 383	299 340	258 299	258 295	292 334	268 309	300 335	297 332	260 296	265 300	258 299	296 337	276 317	271 307	274 310	279 321	279 314
Spain	Barcelona	344	293	347	314	273	250	307	251	296	293	246	256	240	311	291	271	268	280	292
Spain Switzerlan	Madrid VZurich	346 346	296 296	343 339	316 284	275 243	248 243	309 277	253 253	294 295	291 292	248 247	258 252	243 243	313 281	293 261	274 258	270 261	282 265	294 266
India	Bangalore	174	121	180	156	115	112	150	79	153	150	81	110	68	153	133	106	102	133	120
India	Chennai	160	107	177	143	101	101	136	66	146	143	67	97	54	139	120	92 148	89	123	106
India India	Delhi Mumbai	213 207	163 156	213 201	199 192	158 151	147 131	192 185	116 105	186 176	183 173	123 116	153 146	106 96	196 189	176 169	140	145 138	167 161	162 155
Bahrain	Manama	225	210	244	201	160	160	194	130	205	201	125	155	120	198	178	151	147	182	184
UAE UAE	Abu Dhabi Dubai	232 241	185 196	240 235	221 231	179 190	174 165	214 224	143 139	213 210	210 207	145 155	175 184	132 130	217 228	198 208	170 181	167 177	193 195	184 194
Ireland	Dublin	339	311	335	336	294	263	316	261	288	289	268	284	251	320	308	293	290	295	297
UK UK	Birmingham Bracknell	323 317	292 282	351 347	313 302	271 261	245 236	300 296	241 232	270 263	269 265	245 235	268 259	231 222	308 304	290 279	292 283	267 256	279 270	281 272
UK	Bristol	319	284	350	305	263	238	300	234	268	267	237	261	224	308	282	285	259	272	274
UK	Glasgow	338	309	368	330	289	260	314	256	284	284	262	283	246	322	307	307	284	294	296
UK UK	Livingstone	326 334	305	354 363	316 325	275 284	248 256	302 316	244 252	272 286	272 283	248 258	279	234 242	310 324	293 302	295 303	270 279	282 290	284 292
UK	Manchester	328	298	357	319	277	250	305	246	275	274	251	273	236	313	296	297	273	284	286
UK UK	London Swindon	317 322	285 288	344 353	306 308	265 267	239 241	293 301	235 237	265 269	264 270	238 240	262 264	225 227	303 309	283 285	286 288	260 262	273 275	275 277
USA	Atlanta	257	304	243	259	258	258	236	286	194	198	282	273	277	245	240	305	308	279	303
USA USA	Chicago Dallas	268 223	314 273	253 212	270 233	263 213	263 222	247 210	291 243	208 154	205 157	287 244	278 230	282 234	256 220	252 215	310 261	313 264	298 261	308 272
USA	Houston	223	281	212	233	213	221	209	243	161	157	244	230	235	219	215	263	264 266	253	271
USA	Los Angeles	191	242	177	193	192	187	170	206	121	121	207	191	196	179	209	234	226	214	241
USA USA	Miami New York	297 255	360 311	306 261	318 270	302 260	296 254	296 247	324 275	234 185	237 188	319 276	310 261	314 265	305 256	318 276	343 301	338 293	346 298	359 310
USA	San Francisco	182	251	192	182	183	180	159	214	124	121	210	201	205	168	199	227	229	209	250



Coverage Bands and Frame Delay Service Degradation

Enterprise Customers

(b) Global to UK Guidance:

Country	P ₀ P	Dublin	Birmingham	Bracknell	Bristol	Glasgow	Leeds	Livingstone	Manchester	London	Swindon
Australia	Melbourne	335	320	314	319	338	326	334	328	317	322
Australia	Perth	302	289	278	284	309	296	305	298	285	288
Australia	Sydney	335	347	344	350	368	354	363	357	344	353
China	Beijing	336	309	299	305	330	316	325	319	306	308
China	Guangzhou	294	268	258	263	289	275	284	277	265	267
China	Hong Kong	263	242	233	238	260	248	256	250	239	241
China	Shanghai	316	300	293	300	314	302	316	304	295	301
Indonesia	Jakarta	261	238	229	234	256	244	252	246	235	237
Japan	Osaka	288 289	270 267	260 263	272 267	284 284	272 272	286 283	273 274	265 264	269 268
Japan Japan	Tokyo Yokahama	289	283	274	279	301	289	297	274	280	282
Malaysia	Kuala Lumpur	271	273	264	269	291	279	289	281	270	272
Phillippines	Manilla	269	290	279	285	311	297	306	299	286	289
Singapore	Singapore, TSD	254	231	222	227	249	237	245	239	228	230
South Korea	Seoul	317	308	301	306	322	310	324	312	303	309
Taiwan	Taipei	304	314	305	310	332	320	328	322	311	313
Thailand	Bangkok	293	289	280	285	307	295	303	297	286	288
Thailand	Nonthaburi	290	263	253	259	284	270	279	273	260	262
Vietnam	Hanoi	288	276	267	272	294	282	290	284	273	275
Vietnam	Ho Chi Minh	290	278	269	274	296	284	292	286	275	277
Belgium	Brussells	55	30	26	32 52	49	36	45	38	27 47	33
Czech Republi Denmark	Copenhagen	73 62	55 36	46 33	38	69 56	58 43	72 52	59 45	33	55 41
France	Marseille	70	44	34	39	64	51	60	53	40	43
France	Paris	55	30	21	26	49	36	45	38	27	29
Germany	Dusseldorf	59	33	30	35	53	39	48	41	30	38
Germany	Frankfurt	60	41	32	37	56	45	58	45	34	40
Germany	Hamburg	58	32	29	34	52	38	47	40	29	37
Hungary	Budapest	85	67	59	64	82	70	84	71	59	67
Italy	Milan	75	56	48	54	72	60	74	60	49	57
Netherlands	Amsterdam	48	24	21	26	43	30	38	32	21	29
Poland Russia	Warsaw Moscow	81 117	63 99	55 91	60 96	76 112	66 102	80 116	67 103	55 91	63 99
Spain	Barcelona	75	48	38	44	69	55	64	58	45	99 47
Spain	Madrid	77	51	40	46	71	58	67	60	47	49
Switzerland	Zurich	77	51	40	46	71	58	67	60	47	49
India	Bangalore	225	201	191	197	220	208	216	210	198	200
India	Chennai	232	209	203	208	227	215	223	217	206	211
India	Delhi	217	191	181	186	212	198	207	200	187	190
India	Mumbai	189	166	155	161	184	172	180	174	162	164
Bahrain	Manama	205	182	173	178	200	188	196	190	179	182
UAE	Abu Dhabi	201	182	176	184	196	184	198	186	179	181
UAE Ireland	Dubai Dublin	207	184 25	181 28	186 23	202	190 24	198 32	192 20	181 32	189 26
uK	Birmingham	26	25 8	28 14	23 11	24	15	23	11	17	12
UK	Bracknell	29	14	8	10	30	18	28	21	9	10
UK	Bristol	21	11	10	8	28	21	29	17	13	9
UK	Glasgow	31	24	29	28	8	15	9	16	26	31
UK	Leeds	24	13	18	21	15	8	13	9	14	20
UK	Livingstone	32	23	28	29	9	13	8	17	22	30
UK	Manchester	23	10	21	17	19	9	18	8	17	17
UK	London	32	14	7	13	26	14		17	8	14
UK	Swindon	25	12	9	9	31	20	30	16	14	8
USA	Atlanta	137	110	107	113	131	117	127	120	107	116
USA	Chicago	150	123	115	123	144	130	139	132	120	129
USA USA	Dallas Houston	162 163	139 137	134 133	141 139	157 158	145 144	153 153	147 146	136 133	140 143
USA	Los Angeles	182	168	165	166	186	174		176	165	169
000	•	159	138	135	140	159	145	154	147	135	144
USA	Miami										
USA USA	Miami New York	104	88	79	87	104	92		94	83	87



Coverage Bands and Frame Delay Service Degradation

Enterprise Customers

(c) Global to India, Middle East and USA

Country	Pop	Bangalore	Chenna	Delhi	Mumbai	Manama	Abu Dhabi	Dubai	Atlanta	Chicago	Dallas	Houston	Los Angeles	Miami	New York	San Francisco
~	U	O	≝.	≅.	=.	ш	≌.	≌.	Ø	0	S		S	=.	~	0
Australia Australia	Melbourne Perth	170 117	160 107	213 163	207 156	222 169	232 185	241 196	257 304	268 314	223 273	231 281	191 242	297 360	255 309	182 251
Australia	Sydney	181	158	214	201	239	241	235	245	256	212	216	201	323	275	192
China	Beijing	153	143	199	192	198	221	231	259	270	233	232	193	318	270	182
China	Guangzhou	112	101	158	151	156	179	190	258	263	213	216 224	192	302	260	183
China China	Hong Kong Shanghai	112 146	91 136	147 192	134 185	156 191	174 214	168 224	258 236	263 247	225 210	209	189 170	299 296	257 247	180 159
Indonesia	Jakarta	76	62	116	105	127	143	139	286	291	243	244	206	324	273	215
Japan	Osaka	153	133	186	176	201	213	210	194	208	154	161	121	234	185	124
Japan Japan	Tokyo Yokahama	150 153	130 127	183 186	173 170	198 201	210 213	207 204	198 201	205 208	157 160	158 161	121 136	237 261	188 213	121 124
Malaysia	Kuala Lumpur	81	70	127	120	125	148	159	291	296	244	249	226	335	293	216
Phillippines	Manilla	110	100	156	150	155	175	184	273	278	230	231	191	310	259	201
Singapore South Korea	Singapore, TSD Seoul	68 150	53 139	109 196	96 189	116 194	136 217	130 228	277 248	282 260	234 223	235 222	199 223	314 332	266 290	205 213
Taiwan	Taipei	133	123	179	173	178	201	212	240	252	215	214	209	318	276	199
Thailand	Bangkok	102	92	148	141	147	170	181	305	310	269	268	234	343	301	227
Thailand	Nonthaburi	99	89	145	138	144	167	177	308	313	264	266	226	338	293	229
Vietnam Vietnam	Hanoi Ho Chi Minh	133 116	118 106	167 162	161 155	178 168	193 184	195 194	279 303	298 308	261 272	253 271	214 241	346 359	298 308	209 250
Belgium	Brussells	212	222	206	179	195	197	197	125	138	152	152	181	153	100	177
zech Repub	Prague	231	246	227	201	219	213	221	145	158	169	171	198	173	116	193
Denmark France	Copenhagen Marseille	218 220	228 235	213 214	185 189	201 206	212 223	203 214	132 140	145 148	164 168	159 167	187 190	160 168	112 119	188 196
France	Paris	207	220	199	174	191	200	197	125	133	152	152	177	153	101	180
Germany	Dusseldorf	215	225	209	182	198	209	200	129	141	161	155	184	156	108	189
Germany Germany	Frankfurt	218 214	232 224	212 208	186 181	204 197	200 208	208 199	130 128	143 140	156 160	156 154	185 183	158 155	102 107	178 184
Hungary	Hamburg Budapest	243	258	240	215	231	225	233	159	171	181	185	210	186	127	204
Italy	Milan	233	248	229	204	221	215	223	147	160	171	174	200	175	117	194
Netherlands	Amsterdam	208	216	199	174	189	205	196	118	131	154	145	178	146	98	185
Poland Russia	Warsaw Moscow	239 275	254 290	236 277	210 247	227 263	221 257	229 265	154 196	167 208	177 213	181 221	206 242	182 223	123 159	200 235
Spain	Barcelona	224	239	219	193	210	220	214	145	153	172	171	198	173	123	200
Spain	Madrid	226	241	221	196	213	219	216	147	155	168	174	200	175	119	196
Switzerland India	Zurich Bangalore	226 8	241 29	221 64	196 46	213 177	217 186	216 191	139 299	152 309	169 294	166 285	193 25 9	167 329	118 268	197 258
India	Chennai	26	11	67	53	163	179	190	290	300	297	296	262	343	275	252
India	Delhi	64	63	0	33	220	223	224	288	296	317	314	292	315	267	295
India	Mumbai	46 177	53 167	33 223	0 216	213	217 35	209	262 279	270 288	281	275 290	280 318	290 307	232 248	289
Bahrain UAE	Manama Abu Dhabi	183	174	223	217	9 35	35 0	14	298	311	297 302	310	311	325	248	302 318
UAE	Dubai	191	169	224	209	27	14	0	288	300	299	301	320	315	250	309
Ireland	Dublin	222	232	217	189	205	201	207	137	150	162	163	187	160	105	180
UK UK	Birmingham Bracknell	202 194	212 205	194 184	169 159	185 176	182 176	187 184	114 110	127 123	142 139	140 137	171 168	141 138	89 80	164 161
UK	Bristol	196	207	186	161	178	184	186	113	123	141	139	170	140	87	163
UK	Glasgow	217	227	212	184	200	196	202	131	144	157	158	186	159	104	179
UK UK	Leeds Livingstone	205 213	215 223	198 207	172 180	188 196	184 198	190 198	117 127	130 139	145 153	144 153	174 182	145 154	92 101	167 178
UK	Manchester	207	217	200	174	190	186	192	120	132	147	146	176	147	94	169
UK	London	196	206	187	162	179	179	181	107	120	136	133	165	135	83	159
UK USA	Swindon Atlanta	199 299	210 290	190 288	164 262	182 279	181 298	189 288	116 0	129 54	144 36	143 28	173 66	144 69	85 23	166 81
USA	Chicago	309	300	296	270	288	311	300	54	0	37	28 46	85	82	23 34	89
USA	Dallas	294	275	317	281	297	302	299	36	37	0	13	48	105	56	52
USA	Houston	285	276	314	275	290	310	301	28	46	13	0	39	95	47	53
USA USA	Los Angeles Miami	259 329	237 336	292 315	280 290	318 307	311 325	320 315	66 69	85 82	48 105	39 95	0 122	122 0	0 48	0 135
USA	New York	265	278	267	235	251	249	253	26	34	58	51	0	52	0	0
USA	San Francisco	255	246	295	289	302	318	309	81	89	52	53	0	135	0	0



Coverage Bands and Frame Delay Service Degradation

Enterprise Customers

(d) Global to Europe and Russia Guidance

				Co			_					>					
Co		Brussells	Pro	Copenhagen	Marseille	_	Dusseldorf	Frankfuri	Hamburg	Budapest	-	Amsterdam	Warsaw	Mos	Barcelona	N ₂	Z
Country	PoP	sells	Prague	agen	seille	Paris	dorf	kfurt	burg	pest	Milan	dam	rsaw	Moscow	lona	Madrid	Zurich
Australia	Melbourne	333	351	339	340	323	333	338	335	363	353	327	359	395	344	346	346
Australia	Perth	284	301	301	289	270	294	286	297	315	304	288	311	352	293	296	296
Australia China	Sydney Beijing	324 302	340 290	334 309	343 309	327 291	330 302	326 275	332 305	347 304	341 292	335 296	347 299	383 340	350 314	346 316	339 284
China	Guangzhou	261	248	268	268	250	261	233	263	262	251	254	258	299	273	275	243
China China	Hong Kong Shanghai	236 296	248 283	251 302	240 302	224 284	245 296	233 268	247 298	262 297	251 285	244 289	258 292	295 334	250 307	248 309	243 277
Indonesia	Jakarta	242	259	257	246	228	251	244	253	273	261	245	268	309	251	253	253
Japan	Osaka	278	298	289	285	269	287	278	280	303	293	293	299	335	296	294	295
Japan Japan	Tokyo Yokahama	279 279	295 298	286 289	282 285	269 272	284 287	275 277	281 284	300 303	290 292	290 293	296 298	332 334	293 296	291 294	292 295
Malaysia	Kuala Lumpur	240	252	258	245	227	251	239	253	264	254	244	260	296	250	252	247
Phillippines	: Manilla Singapore, TSD	246 231	266 248	257 247	252 236	236 217	255 241	237 233	248 243	271 262	252 251	261 235	265 258	300 299	256 240	258 243	255 243
South Kore		299	286	306	306	288	299	271	301	300	289	292	296	337	311	313	281
Taiwan	Taipei	283 262	270 269	290 279	290 267	271 248	283 273	255 250	285 275	284	273	276 266	279 277	321 313	294 271	297 274	265 264
Thailand Thailand	Bangkok Nonthaburi	259	269	279	267	248	269	253	275	275 278	265 268	262	274	313	268	274	264
Vietnam	Hanoi	272	270	287	276	260	281	255	283	284	273	275	279	321	280	282	265
Vietnam Belgium	Ho Chi Minh Brussells	283	277 45	292 30	288 27	269 17	286 17	254 32	288 25	282 57	269 47	280 17	276 53	311 89	292 37	294 33	266 40
Czech Rep	Prague	45	8	56	56	38	49	18	28	44	33	34	39	77	61	63	26
Denmark France	Copenhagen Marseille	30 27	56 56	5 56	56 5	38 21	18 49	41 29	31 52	68 70	59 14	23 43	64 64	100 99	61 41	63 37	51 21
France	Paris	17	41	41	21	8	35	19	37	55	34	29	51	86	28	27	32
Germany	Dusseldorf	20	51	21 41	53 29	35 19	8	38 5	28	63	55	17 29	59	98	58	60 48	47
Germany Germany	Frankfurt Hamburg	32 25	18 25	31	52	34	35 25	37	37 5	30 30	20 54	13	26 24	66 62	46 56	59	13 46
Hungary	Budapest	57	44	68	70	52	63	30	33	8	46	41	47	82	75	76	38
Italy Netherland	Milan I Amsterdam	47 17	33 43	59 23	14 43	34 26	52 17	20 29	54 19	46 56	5 45	45 11	41 52	83 93	63 47	66 49	12 37
Poland	Warsaw	53	39	64	64	47	59	26	27	47	41	35	8	78	70	72	34
Russia Spain	Moscow Barcelona	89 37	77 61	101 61	102 41	85 25	98 54	66 46	66 56	82 75	83 63	75 47	78 70	8 110	110 5	108 16	75 55
Spain	Madrid	33	63	63	37	27	56	48	59	76	66	49	72	108	16	5	58
Switzerland		40	26	51	21	32	44	13	46	38	12	37	34	75	55	58	5
India India	Bangalore Chennai	215 222	233 246	221 228	222 235	206 216	215 222	220 232	217 224	245 258	235 248	209 220	241 254	277 290	226 239	228 241	228 241
India	Delhi	206	227	213	214	196	206	212	208	240	229	199	236	277	219	221	221
India Bahrain	Mumbai Manama	179 195	201	185 201	189 206	170 187	179 195	186 204	181 197	215 231	204	174 189	210 227	247 263	193 210	196 213	196 213
UAE	Abu Dhabi	197	213	212	223	200	206	200	208	225	215	205	221	257	220	219	217
UAE Ireland	Dubai Dublin	197 55	221 73	203 62	214 70	194 52	197 55	208 60	199 58	233 85	223 75	196 48	229 81	265 117	214 75	216 77	216 77
UK	Birmingham	33	56	39	47	30	33	41	35	67	57	27	63	99	52	54	54
UK	Bracknell	28	49	36	37	21	30	35	32	62	52	24	58	94	41	44	44
UK UK	Bradford Bristol	29 32	55 52	35 38	43 39	26 23	29 32	40 37	31 34	69 64	58 54	23 26	64 60	101 96	47 44	49 46	49 46
UK	Glasgow	49	69	56	64	46	49	56	52	81	72	43	77	112	69	71	71
UK UK	Leeds Livingstone	36 45	58 72	43 52	51 60	33 41	36 45	45 58	38 47	70 84	60 74	30 38	66 80	102 116	55 64	58 67	58 67
UK	London, Chart S	24	44	30	37	21	24	31	26	56	46	18	52	88	41	44	44
UK UK	Manchester Surrey Quays, L	38 27	61 47	45 33	53 40	35 24	38 27	47 34	40 29	72 59	63 49	32 21	69 55	103 91	58 45	60 47	60 47
UK	Swindon	33	47 55	41	43	24 26	35	40	37	67	49 57	29	63	99	45 47	47	47
UK	Wakefield, Tingl		58	43	51	33		45	38	70	60	30	66	102	55	58	58
USA USA	Atlanta Chicago	125 138	145 158	132 145	140 148	122 130	125 138	130 143	128 140	159 171	147 160	118 131	154 167	196 208	145 153	147 155	139 152
USA	Dallas	152	169	164	168	152	158	156	160	181	171	154	177	213	172	168	169
USA USA	Houston Los Angeles	152 181	171 198	159 187	167 194	148 178		156 185	154 183	185 210	174 200	145 178	181 206	221 242	171 198	174 200	166 193
USA	Miami	153	173	160	168	150		158	155	186	175	146	182	223	173	175	167
USA	New York	103	118	114	119	101	108	105	110	127	117	101	126	162	123	122	122
USA	San Francisco	177	192	192	196	180	186	179	184	203	194	185	200	236	200	196	193





Enterprise Customers

The following definitions are applicable to the Services:

A	The control of the co						
Access Circuit	the network connection provided between the Service Demarcation Point at the Customer Site and the ingress/egress port of the Vodafone MPLS Core Network.						
Acknowledge(s)(d)	a confirmation given to the Customer that a particular service request or Incident						
	being raised is valid and the provision to the Customer of a unique reference for it.						
Annual Measurement	the period of twelve months from the Service Commencement Date or each						
Period	anniversary of the Service Commencement Date thereafter (or a period of twelve						
	months as otherwise agreed between the Parties).						
Committed Information	the guaranteed amount of handwidth that can be transmitted across an Ethornat						
Rate or CIR	the guaranteed amount of bandwidth that can be transmitted across an Ethernet Virtual Circuit.						
Configuration Change(s)							
Comiguration Change(s)	a Project, Hard Configuration Change or a Soft Configuration Change(s).						
Coverage Band(s)	one or more (as applicable) of the groups of coverage set out in the ("Coverage Bands						
	and Frame Delay Service Degradation" section of these Service Specific Terms.						
Enhanced CoS	has the meaning set out in the Service Specification.						
Ethernet First Mile or	This tile meaning set out in the service specimentors.						
EFM	the Ethernet access circuit is delivered using bonded copper pairs.						
Ethernet Virtual Circuit	a point to point logical connection provided by Vodafone across the Vodafone MPLS						
or EVC	Core Network which associates two Service Demarcation Points with each other.						
Excluded Event	any of the following:						
	 (a) a fault or incident with any Vodafone service other than the Service purchased under these Service Specific Terms; 						
	(b) a fault or incident in, or any other problem associated with, non- Vodafone-supplied power, any Customer Equipment, equipment connected Customer's side of the Service Demarcation Point, non- maintained structured cabling or other telecommunications systems not operated or provided by Vodafone;						
	 (c) the fault or incident caused by Customer's negligence, act or omission or that of any third-party not within Vodafone's direct control; 						
	 (d) Customer not performing or a delay in performing any of the Customer obligations or conditions of use set out in the Agreement; 						
	 (e) Customer requesting Vodafone to modify a Customer Site, or test one although no Incident has been detected or reported in accordance with the Service Specific Terms; 						
	 Service suspension or a Force Majeure event in accordance with the General Terms; 						
	(g) the inability or refusal by a third-party supplier to provide or maintain the access circuit at a Customer Site;						
	(h) a Configuration Change in the process of implementation;						
	(i) an Outage;						



Definitions

Enterprise Customers

	(j)	Customor's failure to provide or delay in providing the passessor rack
	(J)	Customer's failure to provide or delay in providing the necessary rack space and power required for the installation and operation of the CPE;
	(k)	Customer's failure to supply all reasonable information required by Vodafone, including complete details of the Customer Site;
	(U)	any degradation of performance that is caused by, or for any fault in, the access circuit that occurs as a result of, or in connection with, technical limitations beyond Vodafone's control (including, by way of example and without limitation, breaks in fibre that are (i) caused by a third party who is not controlled by Vodafone; or (ii) in fibre that is not owned or operated by Vodafone) or (iii) submarine cable breaks;
	(m)	where a Service Credit is claimed for late repair, the Unavailability period relevant to this claim, will be excluded from the cumulative annual Service Availability calculation;
	(n)	a fault or incident caused by failure at any other Customer Site;
	(0)	Vodafone being unable to access or being delayed in accessing any equipment or the Customer Site (where a Customer Site visit is required) due to reasons outside its control, including, inclement weather or Customer's refusal to admit Vodafone;
	(p)	any delay attributable to a Freeze Period; or
	(q)	any other circumstances caused by events for which Vodafone is not liable in accordance with the terms of the Agreement, including delays attributable to excavation permissions or other local or national laws or regulations.
Extended Information Rate or EIR		aranteed amount of bandwidth that can be transmitted across the acing port on the CPE.
Frame Delay	Core Netwo	ken by an Ethernet frame to be transmitted across the Vodafone MPLS rk, and is measured as an average round trip value for an Ethernet frame ingress and egress MPLS switches located with the Vodafone MPLS Core des.
Frame Delay Variation	between the Frame Delay	n of the inter-Frame Delay and will be measured as the absolute variance e Frame Delay seen on the individual Ethernet frames and the average by between the ingress and the egress MPLS switches located within the PLS Core Network.
Frame Loss		age of Ethernet frames lost between the MPLS switches located within the MPLS Core Network.
FTTC	comprises th	Cabinet and is an access circuit supplied by BT Openreach in the UK, and ne fibre circuit between the BT Local Exchange and the BT Street Cabinet between the Street Cabinet and the Customer Site.
FTTP	parties in the	Premises and is an access circuit supplied by Vodafone and other third e UK, and comprises the fibre circuit between the local exchange or other sence (" PoP ") and the Customer Site.
Hard Configuration Change	Customer S	the Service that requires Vodafone (or a Third Party Provider) to access a ite and may include re-grading an Ethernet Virtual Circuit requiring an he Access Circuit.





Enterprise Customers

Incident	any fault, incident or problem which affects the Service provided to the Customer excluding any fault, incident or problem with any other Vodafone service purchased under separate Service Specific Terms.
MPLS	multi-protocol label switching.
MTU	the maximum transmission unit and is the maximum transmittable packet size that can be used.
Network Termination Equipment (CPE)	the hardware and software used to terminate access to the Vodafone MPLS Core Network at a Customer Site.
Normal Change	a change that is not an emergency change or a standard change, and is listed as a "Normal Change" in the Service Request Catalogue. Normal changes follow the defined steps of the change management process implemented by Vodafone from time to time.
Outage	has the meaning set out in clause 1.2 of the Service Levels.
Peak Information Rate (PIR)	the maximum traffic rate available for a particular EVC.
Physical Port	an Ethernet interface on the CPE.
Premium CoS	has the meaning set out in the Service Specification.
Prioritisation Rate	the parameter controlled by BT Openreach in the Openreach network for FTTC and FTTP in which packets will be discarded above the prioritisation rate.
Project	work that it outside of the scope of a Hard Configuration Change and a Soft Configuration Change and may include: (a) proposal development; (b) project management; or (c) more than 20 changes grouped together for a Customer Site.
PSTN	the public switched telecommunications network.
Regrade	the increase of the Committed Information Rate of an EVC or Access Circuit.
Regrade Charge	the one off Charge to administer each Regrade request for an EVC made by the Customer.
Service Credits	the service credits payable by Vodafone to Customer in accordance with the provisions of these Service Specific Terms.
Service Degradation Targets	the targets set out in clause 3.3 of the Service Levels and/or Annex A to the Coverage Bands and Frame Delay Service Degradation.
Service Demarcation Point	the handoff between the Customer and Vodafone at the Customer Site and is the Customer-facing port on the CPE.
Service Level(s)	the service levels which apply to the provision of the Service as set out in the Service Levels.





Enterprise Customers

Service Request Catalogue	the service request catalogue for the Services, as made available to Customer and updated by Vodafone from time to time.
Severity Level	a categorisation of the severity of an Incident as determined by Vodafone in Vodafone's discretion as set out in clause 2 of the Service Levels.
Soft Configuration Change	a single logical change to the Service, (that is not a Hard Configuration Change nor a Normal Change), and that Vodafone or a Third Party Provider can carry out remotely and may include maintaining or modifying the then current configuration of the Service, for example re-grading Ethernet Virtual Circuits within the maximum Access Circuit speed.
Standard CoS	has the meaning set out in the Service Specification.
Vodafone MPLS Core Network	the MPLS network operated by Vodafone.