

Service Specific Terms



Dedicated Ethernet

Business Customers

1. The Service - Overview

- 1.1 The Vodafone Dedicated Ethernet Service comprises two different services further described below, “**Optical Services**” and “**E-Line Services**” (together the “**Dedicated Ethernet Service**”). The Dedicated Ethernet Service is a solution that provides secure direct connectivity between two fixed points enabling transparent connection between local area networks. The term “**Service**” or “**Services**” in these Service Specific Terms means the applicable Dedicated Ethernet Service as set out 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 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; and
 - (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**”).
- 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;
 - (d) the Order, which confirms the Service Elements selected by/for Customer;
 - (e) the Tiered Support Service Specific Terms; and
 - (f) any applicable policies and procedures, as provided from time to time by Vodafone.

3. The Service and Equipment

- 3.1 The Dedicated Ethernet Service provides direct connectivity between two fixed points enabling transparent connection between local area networks and will typically consist of one or two access services and a core bandwidth service. The Service may utilise Vodafone-owned capacity on submarine cables and capacity provisioned by Vodafone on terrestrial systems.

3.2 Service Types

- (a) **Optical Services**
The Optical Service uses SDH, TDM and WDM technologies (as further detailed in the Service Specification) and hence is largely transparent to the traffic being carried.
- (b) **E-Line Services**

The E-Line Service is Ethernet only and supports Class Of Service (CoS) options (further detailed below) and granular bandwidth not available on the Optical Service type.

3.3 Service Options

The Dedicated Ethernet Service supports various service options described below:

- (a) **Routing and Protection Options**

This Clause sets out the various routing and protection options that may be available to the Customer. The availability of any of the below options is subject to a feasibility study between Vodafone and the Customer:

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- (i) **Specified Routing:** Services are planned along one or more specific route(s) agreed between the Parties. Where selected, the specifics of this Service option shall be set out in the Order and/or Statement of Work.
- (ii) **Latency Based Routing:** This Service option may be provided as set out in the Order and/or Statement of Work.
- (iii) **No Protection or Restoration:** Vodafone may use automatic protection and, or restoration schemes in order to maintain the Services. If the Services are not to be restored in this manner, this should be set out in the Order and/or Statement of Work.

(b) E-Line Class of Service Option

The E-Line Services support up to three Classes of Service:

- (i) **Premium:** Premium traffic is regarded as most important and hence is given highest priority in the Vodafone network.
- (ii) **Standard:** Standard traffic is of lower priority than Premium traffic but more important than Default traffic, it is treated as such in the Vodafone network.
- (iii) **Default:** Default traffic is lowest priority and is treated as such within Vodafone's network.

(c) Traffic Types

There are two traffic types in the Dedicated Ethernet Service:

- (i) **Guaranteed:** Services are typically configured with a defined bandwidth (for Optical Services) or Committed Information Rate (CIR) for E-Line Services. This traffic is guaranteed to be provided to the Customer.
- (ii) **Non-guaranteed:** A best effort services can be configured with an optional defined bandwidth or Excess Information Rate (EIR). This traffic is non-guaranteed to be provided to the Customer.

Optical Services do not make a distinction between the different traffic types carried and therefore in effect treat all traffic as Guaranteed. E-Line Services can make a distinction between the different traffic types carried and can therefore support both of (and will consist of one or more of) Guaranteed and Non-guaranteed traffic types.

(d) Traffic Policing

Dedicated Ethernet Services offer guaranteed traffic up to a defined bandwidth (for Optical Services) or the CIR (for E-Line Services). To ensure quality of service all traffic is policed at ingress to the network.

(e) Class of Service Mapping

Where a service includes all three Classes of Service a Customer's p-bit settings are mapped to the Premium, Standard and Default CoS in Vodafone's network as shown in the table below.

Customer CoS	Vodafone CoS	Network Behaviour Ingress Bandwidth >PIR
5, 6, 7	Premium	Full rate up to CIR transmitted. Traffic above CIR is dropped.
1,2,3,4	Standard	Full rate up to CIR transmitted. Traffic above CIR is dropped.
0 and unmarked	Default	Transmitted on a best effort basis up to EIR Traffic above EIR is dropped.

Where a Customer takes less than three CoS the Customer's p-bit settings are mapped according to the table below.

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Customer CoS	Vodafone Premium & Standard	Vodafone Premium & Default	Vodafone Standard & Default
5, 6, 7	Premium	Premium	Standard
1, 2, 3, 4	Standard	Default	
0 and unmarked			Default

- 3.4 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.
- 3.5 The Commercial Terms and/or Order will identify which Fixed Equipment, if any, Vodafone will supply to the Customer. Any associated Charges shall be set out in the Commercial Terms and/or Order.

4. Service Specific Conditions of Use

- 4.1 **Ethernet access.** The following limitations apply to any Customer Sites connected to the Network by a Third Party Provider Ethernet access circuit using Ethernet technology:
- (a) 100Mbps, 1000Mbps and 10Gbps Ethernet access circuit bandwidths may be reduced by up to 3Mbps in some circumstances, due to the underlying technology used to deliver the Service;
 - (b) where dual access is provided using Third Party Provider access circuits, Vodafone cannot guarantee end-to-end diversity of the Access Circuits; and
 - (c) where an Access Circuit ordered cannot be provided at a Customer Site, Vodafone will advise the Customer of alternative options and prices. The Customer may order an alternative or cancel, without penalty. In these circumstances then neither Party will be liable to the other as a result of this cancellation.
- 4.2 **PSTN and IP Voice/Video services connection:** Customer shall not (and shall ensure that Users shall not) connect or seek to connect the Services to the PSTN or other voice or video services (e.g. voice over IP) unless Customer purchases such services from Vodafone and only in accordance with Applicable Law.
- 4.3 **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.
- 4.4 **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 to the Service that is not a Standard Change shall be subject to the following service change request procedure ("**Service Change Request Procedure**"):

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- (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.
- 5.2 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.

6. Changes to Charges

- 6.1 Vodafone may (in addition to rights set out in the General Terms) change the Charges or any part provided that the change is in response to: (a) a judicial, statutory or regulatory decision, order or similar direction; (b) a variation by other communication providers ("**CPs**") to amounts Vodafone receives from or pays to such CPs; or (c) a change of the costs of any Third Party Provider services required for the Service. Vodafone shall provide the Customer written notice of a change under this clause 6.1 and if the Customer does not accept such changes within 5 Working Days of notification, then Vodafone may cancel the affected Order without having any liability to the Customer.

Dedicated Ethernet Service



Service Specification

1. Introduction

The Vodafone Dedicated Ethernet Service is a secure, private Wide Area Network (WAN) service which supports deterministic connectivity over an optical network. Dedicated Ethernet can be used for point to point and point to multi-point wide area communications. Dedicated Ethernet is based on optical transmission systems that use a combination of Time Division Multiplexing (TDM) and Ethernet multiplexing to provide connectivity between Customer Sites, which are connected to the Vodafone Optical Network using a range of site topologies and network access methods to meet availability and performance requirements.

The Services provide direct connectivity between two fixed points enabling connectivity between LANs and will typically consist of 1 or 2 access services and a core bandwidth service. The Service may utilise Vodafone owned or leased capacity on submarine cables and capacity provisioned by Vodafone or a contracted Third Party on terrestrial systems.

The Services replaces services previously referenced as: (a) Ethernet Private Line (EPL); (b) International Ethernet Private Line (IEPL); (c) National Private Leased Circuit (NPLC); (d) Data Centre Connect (DCC); (e) Bandwidth Connect (BWC) or (f) International Private Leased Circuit (IPLC), as applicable, but each shall be considered as Service in accordance with the Services Agreement. These site topologies and network access methods are further detailed below in this Service Specification.

1.1 Service Platform

The Services are delivered on an optical platform such as OTN, SDH, WDM or Packet Optical. The use of an optical network means that the services provided have known routing. The options are detailed in section 5 of this Service Specification.

1.2 Service Overview

The Dedicated Ethernet Service provides a point to point connection between two User Network Interfaces (UNIs). The connection may be over an optical network using a dedicated wavelength, a timeslot within an SDH or OTN network, or an Ethernet Virtual Circuit (EVC) across a packet optical network.



1.3 Service Interfaces

The Services are typically delivered using standard Ethernet interfaces at 100 Mbps, 1 Gbps, 10 Gbps or 100 Gbps; however, Services may also be delivered with other interfaces including: STM-16, STM-64, Fibre Channel (100, 200, 400 and 800), IBM FICON, FICON Express, ODU1, ODU2, ODU2e or ODU4. The relevant interface selected by the Customer shall be set out in the Order.

1.4 Maximum Transmission Unit (“MTU”)

The MTU for the Service may vary by location, because an MTU is determined by the lowest common denominator end-to-end. Most often, the lowest common denominator is in the access network and as a result Vodafone supports a minimum standard Ethernet frame MTU of 1518 bytes. MTUs of higher than 1518 bytes may be provided by Vodafone where set out in the Order and/or Statement of Work. The MTU on the core network is 9000 bytes but the MTU on access connections requires validation from any Third Party Provider.



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1.5 Failure Propagation and Link Loss Forwarding

The Service is transparent to Link Loss Forwarding (LLF); however, the ability for LLF to work end-to-end relies on the capability of the local access circuit, and as such, LLF support on a local access cannot be guaranteed. LLF is only provided if it is set out in the Order and/or Service Specification.

1.6 Service Types

Vodafone Dedicated Ethernet Service supports three different service types Optical, Ethernet Private Line and Ethernet Virtual Private Line. Ethernet Private Line and Ethernet Virtual Private Line are together referred to as the “**E-Line Services**”. The Service type provided to a given Customer will be set out in the applicable Customer’s Order and/or Statement of Work.

(a) Optical Service

This service is provided over optical (WDM, OTN or SDH) equipment and hence, it is generally transparent to the service being carried. The main exceptions are OTN services carried over an OTN network and SDH services carried over an SDH network. In both cases the relevant section head information is terminated at the User Network Interface (UNI).

(b) E-Line Services

E-Line services are provided over a packet optical infrastructure that uses Ethernet multiplexing to provide a deterministic service. E-line services offer optional Ethernet performance monitoring and Class of Service (CoS) support.

(i) Ethernet Private Line (EPL)

The EPL service maps all Ethernet traffic at a single UNI to one EVC and hence, it is transparent to customer VLANs.

(ii) Ethernet Private Virtual Line (EVPL)

The EVPL service is VLAN aware and hence different customer VLANs can be mapped to different Class of Service (CoS) or to different locations to provide a point to multi-point service.

1.7 Transparency to VLAN tags and OAM

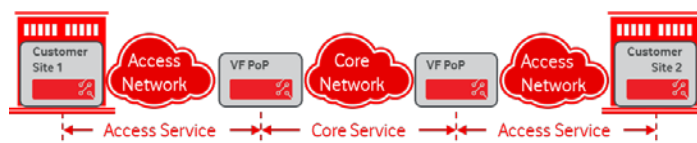
In general, for the Optical Service and the EPL Service, Ethernet frames are passed transparently through the Vodafone Network, and this includes VLAN tags and OAM. Where the Services consist of Third Party Provider access networks, these are generally offered with full transparency.

EVPL services are not transparent to customer VLANs as these are used to map customer traffic to different Class of Service or different locations.

2. Service Packages/ Service Composition

2.1 Separate Core and Access

Depending on how the Service is presented, an access service can be located at none, one end or both ends of a core bandwidth service. An access service (where taken by the Customer) will run from a Customer Site to one or more Vodafone Point of Presence (PoP) and the core bandwidth service will be from PoP to PoP as set out below.





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The access service may operate at the same speed as the core bandwidth service or at a higher speed to allow for growth of the core bandwidth service without the need to re-provide the access service. The access service cannot be a lower speed than the core bandwidth service.

The access service is connected by one or both of the following methods as set out in the Customer's Order and/or Statement of Work:

- (a) Direct access via Vodafone fibre

Where practicable, Vodafone will connect Customer Sites directly onto Vodafone's optical transmission network using optical fibre that is either owned or procured by Vodafone ("On-Net").

- (b) Access via Third Party

When the distance and circuit speed requirements prevent deployment of On-Net access, Vodafone may utilise Third Party Provider connectivity. In some instances, Third Party Provider access may also be used to provide additional resilience for Services with protected access.

2.2 Network Termination Equipment ("NTE")

Where the Service is provided with On-Net access connections only, Vodafone will provide and manage the NTE as part of the Service. Where the Services have one or more off-net access connections, Vodafone shall manage and provide NTE only where set out in the Order and/Statement of Work. In some cases, a Third Party Provider may provide equipment to terminate the Service.

3. Service Packages/ Protection Options

In each part of the network: access, core, access, different protection options can be used to provide a variety of resilience levels for the service as set out in the following sections.

3.1 Access Protection Options:

There are several access options that can be applied to either one or both ends of a service.

3.1.1 Unprotected Access



This access provides an unprotected connection between the VF PoP and the customer site with a single customer interface.

3.1.2 Protected Access



This access provides a protected connection between the VF PoP and the customer site with a single customer interface.

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3.1.3 Dual Homed Access



This access provides connectivity between two VF PoPs and the customer site which has a single NTE with a single customer interface.

3.1.4 Dual Diverse



This access provides connectivity between two VF PoPs and the customer site which has two NTEs and hence, two customer interfaces

3.2 Core Protection Options:

Different protection options that can be applied to the core of the network

3.2.1 Unprotected Core



This option provides an unprotected connection between two VF PoPs.

3.2.2 Protected Core



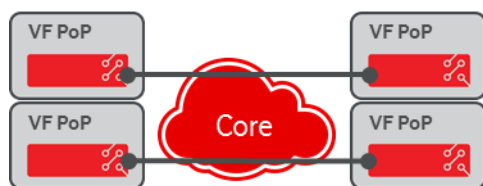
This option provides a protected connection between two VF PoPs.

3.2.3 Diverse Core

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This option provides two diversely routed connections between four different VF PoPs, one connection between each pair of VF PoPs

3.3 Service Classification

The access and core protection options can be combined in different way to produce a variety of services but most services use similar protection levels end to end and the sections below show five example services. These services define the “Service Classification” used to determine the Service Level Agreement (SLA) that is applicable to each service.

3.3.1 Unprotected End to End

The unprotected end-to-end resilience option provides a Service without specific protection or diversity. If the Service fails, no automatic traffic restoration will be offered. Service restoration time is defined by the Incident Resolution Time as set out in the Service Terms (Service Levels and Support Services). Vodafone may provide automatic restoration of all or part of the Service in its absolute discretion.

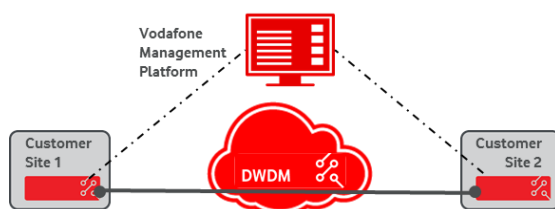
If further restoration options are required, additional Services may be purchased by Customer separately to address any Service failure.

Two variants of an unprotected resilience option are supported by Vodafone. One variant where the Service traverses the Vodafone Network, and one variant where there is a bespoke build, as illustrated below

Vodafone Network:



Bespoke build:



3.3.2 Unprotected Access with a Protected Core

The unprotected access with a protected core resilience option provides a Service with a single point to point link, with no protection in the access part of the network; however, any traffic passing through the core of Vodafone’s Network will be protected. In general, the network core uses different equipment and route diversity is provided for protection. No guaranteed traffic restoration time is offered with this resilience option

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unless set out in the Order and/or Statement of Work. With this option, the Service is protected against any single failure in the core network.



Upon a failure in the access network, no automatic traffic restoration will be offered and the service restoration time or Incident Resolution Time will depend on what is set out in Order and/or Statement of Work.

3.3.3 Protected Access and Protected Core

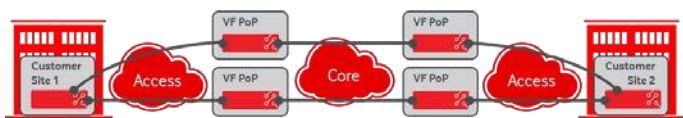
The protected access and protected core resilience option provides a Service with a single point to point link which has protection in the access and core parts of the network. In general, the Service will be carried on different equipment and, where possible, route diversity will be provided. No guaranteed traffic restoration time is offered with this option unless set out in the Services Agreement. With this option, the Service is protected against any single failure in part of the network access, core and access.



Vodafone will seek to achieve end to end diversity; however, the protected access and protected core resilience option does not guarantee site, equipment and route diversity.

3.3.4 Dual Homed Protected

The dual homed protected resilience option provides a Service with a single protected point to point link. Separate and diverse connections are provided end to end using different fibres, cables and ducts. Where it is not possible to achieve end to end diversity, Vodafone will highlight this to the Customer and exceptions will be agreed with the Customer in writing. With this option, the Service will be carried on different equipment, different locations and separate routes.



No guaranteed traffic restoration time is offered with this option unless it is specifically agreed with Vodafone. With this option, the Service is protected against any single failure in each part of the network access, core and access. With this option following a failure, Vodafone may seek to restore the back-up path; however, in this instance, end to end separation is not guaranteed.

3.3.5 Dual Diverse Paths

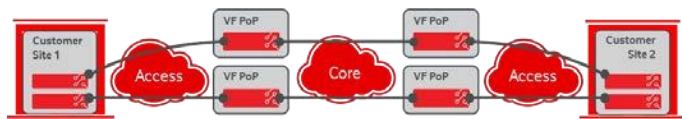
Two variants of a dual diverse path resilience option are supported by Vodafone: one where the Service traverses the Vodafone Network, and one where there is a bespoke build, as illustrated below

Vodafone Network:

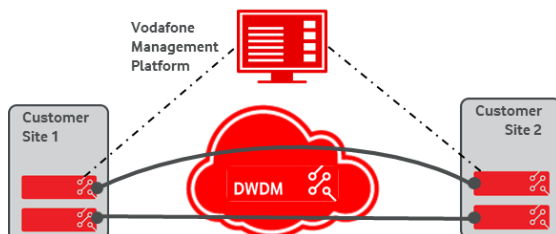
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Bespoke Build:



In this option, Service traffic protection is controlled by the Customer and Vodafone provides no specific traffic restoration of either path, unless set out in the Services Agreement.

In this option, the Service consists of two separate unprotected paths which are planned diversely to one another. Separate connections are provided end to end using different equipment, fibres, cables and ducts. Where it is not possible to achieve end to end diversity Vodafone will highlight this to the Customer and exceptions will be agreed between the Parties. For this option following a failure, Vodafone may seek to restore the back-up path; however, in this instance end to end separation is not guaranteed.

3.4 Permitted Access and Core Combinations

The different levels of access and core protection can be combined in various ways and the table below shows the permitted combinations. For services where Vodafone do not provide an access segment the access is shown as Customer Provided Access (C.P.A.).

Service Classification	A end Access	Core	B end Access
Unprotected end to end	Unprotected	Unprotected	Unprotected
	Unprotected	Unprotected	Protected
	Unprotected	Unprotected	C.P.A.
	Protected	Unprotected	Unprotected
Service Classification	A end Access	Core	B end Access
	Protected	Unprotected	Protected
	Protected	Unprotected	C.P.A.
	C.P.A.	Unprotected	Unprotected
	C.P.A.	Unprotected	Protected
	C.P.A.	Unprotected	C.P.A.



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Unprotected access and protected Core	Unprotected	Protected	Unprotected
	Unprotected	Protected	Protected
	Unprotected	Protected	C.P.A.
	Unprotected	Protected	Unprotected
	Protected	Protected	Unprotected
	C.P.A.	Protected	Unprotected
Protected access and protected Core	Protected	Protected	Protected
	Protected	Protected	C.P.A.
	C.P.A.	Protected	Protected
	C.P.A.	Protected	C.P.A.
Dual homed access protected end to end	Dual Homed	Dual Diverse	Dual Homed
	C.P.A.	Dual Diverse	Dual Homed
	Dual Homed	Dual Diverse	C.P.A.
Dual diverse paths	Dual Diverse	Dual Diverse	Dual Diverse
	C.P.A.	Dual Diverse	Dual Diverse
	Dual Diverse	Dual Diverse	C.P.A.
	C.P.A.	Dual Diverse	C.P.A.

The Service Level applicable to Services with a mixture of protection options is defined under the Service Specific Terms with reference to the Service Classification applicable to the Customer detailed in the first column in the table above.

3.5 Customer Hand-off

All Dedicated Ethernet Services are handed off via one Customer interface at each end of the Service except for a dual diverse service. A dual diverse service has two separate Customer interfaces at each end of the Service.

The number of Customer interfaces is independent of whether Vodafone provides the access, a Third Party Provider provides the access, or the Customer provides their own access. For example, with protected access connections and an unprotected core link there is a single Customer interface at each end of the Service. For a dual diverse service with an A end Access and core connections two interfaces are provided at each end of the Service

3.6 Bespoke Network Build

Where set out in the Order and/or Statement of Work, the Services may be provided as a bespoke network build, which is a single domain providing connectivity between two Customer Sites with no separate access and core networks. The bespoke network build simply links two Customer Sites using an optical system over fibre, as illustrated below:

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3.7 Off-Net Service

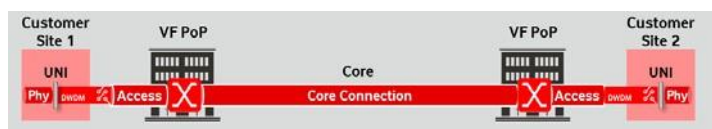
Vodafone, in agreement with the Customer, may re-sell a Service from a Third Party Provider which does not use any of Vodafone's network, i.e. it is an Off-Net Service. In this instance Vodafone would not have visibility of the Service and hence, the Service Levels in the Vodafone's Dedicated Ethernet Service Terms are not applicable. Details of the service and associated Service Levels would be agreed at point of order.

4. Service Speed

Dedicated Ethernet includes three different service types which are described in the following sections.

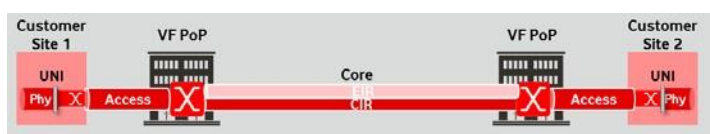
4.1 Optical Service Bandwidth

In general, the throughput of an Optical Service is the same as the interface bandwidth, allowing for any standard overheads, as illustrated below. The limitations on the throughput of an Optical Service are described in section 4.4



4.2 E-Line (EPL or EPVL) Services Bandwidth

Many E-Line Services have a different access and core service bandwidth. Access services are typically 100 Mbps, 1 Gbps or 10 Gbps. The core bandwidth is defined by the Committed Information Rate (CIR) and this provides the guaranteed service information rate, as illustrated below.



There is an option to add an Excess Information Rate (EIR) for traffic with a Default Class of Service. The EIR is not guaranteed but under normal circumstances the EIR is available for lower priority traffic, e.g. web browsing.

4.3 E-Line Access Service Speed

Most access circuits use Q in Q technology and hence, the throughput of the access circuit is reduced, typically this is approximately 2% so a 1G access circuit has a typical throughput of 980 Mbps.

4.4 Optical Services Speed

Vodafone may use a variety of technologies to deliver Services including SDH, OTN and WDM. The relevant technology used shall be set out in the Customer's Order and/or Statement of Work. These underlying technologies can lead to throughput limitations on Service. The sections below describe the Ethernet throughput typically achieved with these technologies:



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4.4.1 Ethernet over OTN

The Services are typically delivered using the Optical Transport Network (OTN) technology as defined by in ITU-G.709. Services that use OTN are generally uncontended and the interface speed is normally the same as the network speed unless stated otherwise.

The availability of OTN is limited in some parts of the World, especially on submarine cable routes; therefore, OTN will be subject to feasibility, design and implementation. This is to ensure that the Services delivered match the features requested.

The OTN standards define how Services are mapped into higher speed signals, currently up to 100Gbps. The table below provides a summary of the Optical Channel Data Unit (ODU) data rates and typical applications for these ODU signals:

Signal	Data Rate (Gbps)	Typical Applications
ODU0	1.24416	Transport of a 1000BASE-X traffic using GFP
ODU1	2.49877512605042	Transport of an STS-48/STM-16 signal.
ODU2	10.0372739240506	Transport of a STS-192/STM-64 signal or a WAN PHY (10GBASE-W)
ODU2e	10.3995253164557	Transport of a 10 Gigabit Ethernet signal or a timing transparent transcoded (compressed) Fibre Channel 10GFC signal
ODU4	104.794445814978	Transport of up to ten ODU2 signals or one 100 Gigabit Ethernet signal

4.4.2 Ethernet over SDH

Older optical platforms provide Services using SDH technology. Services carried over SDH infrastructure use GFP to map Ethernet frames into SDH Virtual Containers (VCs). The number of SDH VCs used determines the throughput of core service which is provided in a Virtual Concatenation (VCAT) bundle. The tables below show the Layer 2 (L2) throughput in Mbps relative to the number of SDH VCs used to carry the Service. Separate tables are provided for n x VC12 (~2Mbps), n x VC3 (~50 Mbps) and n x VC4 (~150 Mbps). Note: 10M Ethernet access is no longer offered in the UK and the minimum access speed in the UK is 100Mbps.

VC12 Based Services

VC12 multiple	Nominal rate (Mbps)	L2 throughput (Mbps)	Interface
X1	2	2.159	10Base-T
X2	4	4.318	10Base-T

¹ MAC frame bit rate in GFP / VCAT (Mbps)

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X3	6	6.477	10Base-T
X4	8	8.636	10Base-T
X5	10	9.870	10Base-T
VC12 multiple	Nominal rate (Mbps)	L2 throughput (Mbps)	Interface
X10	20	21.589	100Base-T

VC3 Based Services

VC3 multiple	Nominal rate (Mbps)	L2 throughput (Mbps)	Interface
X1	50	48.005	100Base-T/ 1000Base-Lx
X2	100	96.009	100Base-T/ 1000Base-Lx
X3	150	144.014	1000Base-Lx
X4	200	192.018	1000Base-Lx
X5	250	240.023	1000Base-Lx
X6	300	288.027	1000Base-Lx

VC4 Based Services

VC4 multiple	Nominal rate (Mbps)	L2 throughput ² (Mbps)	Interface
X1	150	148.585	1000Base-Lx
X2	300	297.171	1000Base-Lx
X3	450	445.756	1000Base-Lx
X4	600	594.342	1000Base-Lx
X5	750	742.927	1000Base-Lx
X6	900	891.512	1000Base-Lx
X7	1000	986.996	1000Base-Lx



Service Specification

10G Ethernet over SDH: Vodafone may be able to supply 10Gbps LAN PHY type Services on a per-case basis. If such Services are being offered, the following Service speeds are supported:

VC4 multiple	Nominal rate (Gbps)	L2 throughput ² (Mbps)	Interface
X7	1	1040.098	10G LAN PHY
X14	2	2080.196	10G LAN PHY
X20	3	2971.708	10G LAN PHY
X27	4	4011.806	10G LAN PHY
X34	5	5051.904	10G LAN PHY
X40	6	5943.416	10G LAN PHY
X47	7	6983.514	10G LAN PHY
X54	8	8023.612	10G LAN PHY
X60	9	8915.125	10G LAN PHY
X64	10	9509.466	10G LAN PHY

² MAC frame bit rate in GFP / VCAT (Mbps)

5. Service Options

5.1 Routing and Protection Options

This clause sets out the various routing and protection options that may be available to the Customer. The availability of any of the below options may be subject to a feasibility study between Vodafone and the Customer:

5.1.1 Specified Routing:

In some instances, Services may be planned along a specific route agreed between the Parties. This is typically for the purpose of routing diversely to a Third Party Provider's circuit or achieving a better Round Trip Delay time (RTD). Where selected, the specifics of this Service option shall be set out in the Order and/or Statement of Work.

5.1.2 Latency Based Routing:

For some applications (e.g. high frequency financial trading), minimum delay is a critical service characteristic and hence the route with the lowest latency is needed. This Service option can be provided as set out in the Order and/or Statement of Work.

5.1.3 No Protection or Restoration:

Vodafone may use automatic protection and, or restoration schemes in order to maintain the Services. If the Services are not to be restored in this manner, this should be set out in the Order and/or Statement of Work.

5.2 E-Line Class of Service Option



Service Specification

Dedicated Ethernet E-Line services support up to three Class of Service (CoS):

5.2.1 Premium

Traffic with a Premium class of service is guaranteed and therefore the CIR is policed for premium traffic at the UNI.

5.2.2 Standard

Traffic with a Standard class of service is guaranteed and therefore the CIR is policed for standard traffic at the UNI.

5.2.3 Default

Traffic with a Default class of service is regarded as Discard Eligible and is configured as EIR traffic. EIT traffic is not guaranteed.

5.3 Class of Service Mapping

Where a service includes all three Classes of Service a customer's p-bit settings are mapped to the Premium, Standard and Default CoS in Vodafone's network as shown in the table below.

Customer CoS	Vodafone CoS	Network Behaviour Ingress Bandwidth >PIR
5, 6, 7	Premium	Full rate up to CIR transmitted. Traffic above CIR is dropped.
1,2,3,4	Standard	Full rate up to CIR transmitted. Traffic above CIR is dropped.
0 and unmarked	Default	Transmitted on a best effort basis up to EIR Traffic above EIR is dropped.

Where a customer takes less than three CoS the customer's p-bit settings are mapped according to the table below.

Customer CoS	Vodafone Premium & Standard	Vodafone Premium & Default	Vodafone Standard & Default
5, 6, 7	Premium	Premium	Standard
1, 2, 3, 4	Standard	Default	Default
0 and unmarked			

6. Optional Features

6.1 Features – Core and Optional Service Elements

Dedicated Ethernet Service



Service Specification

Each Service package comprises of Core Service Elements and may also, where set out in an Order, comprise of Optional Service Elements.

The table below summarises, for each Service package, the Core Service Elements that are included in the base Charges (✓), the Optional Service Elements available for an additional Charge (○), and Services which are not available (✗):

Component	Elements	Optical	EPL	EVPL
Security	Vodafone optical network is ISO27001 compliant.	✓	✓	✓
Deterministic routing	Dedicated Ethernet services provide deterministic routing of all traffic.	✓	✓	✓
Guaranteed service speed	A Dedicated Ethernet service provides a constant throughput service which is guaranteed in line with the limitations described in section 6.	✓	✓	✓
Access and Core Protection Options	The access and core elements of a service can support a variety of protection types providing a range of resilience options.	✓	✓	✓
Flexible Bandwidths	Bandwidth can be varied in 5% increments of the access port speed, e.g. a 1G access port can support services of 250M, 300M, 350M, etc.	✗	○	○
Component	Elements	Optical	EPL	EVPL
No restoration	In the event of a network failure the customer can opt to have no restoration of the service.	○	○	○
Known routing	The customer requires traffic to be carried over a specific route agreed with Vodafone.	○	○	○
Time of Day Restoration	Vodafone may utilise control plane technology to maximise network resilience. In this case traffic may be restored to a home path following a protection event and the subsequent restoration of the home path.	○	✗	✗
Rapid protection	Protected services are restored within 50 ms from detection of fault.	○	○	○
Network Classes of Service	Up to 3 Classes of Service (CoS) to allow prioritisation of delaysensitive traffic e.g. voice and video	✗	○	○

Dedicated Ethernet Service



Service Specification

Service Support	Standard proactive monitoring (Priority Level 1-2 Incidents) and 24/7 Incident Management; including interface down, loss of resilience, unreachable device.	✓	✓	✓
“Non Revertive”	During failure of worker path, service switches automatically to protect path and would remain on its protect path until protect path fails or manually switched back to the worker path.	0	X	X

7. Network Access Methods

A range of Network Access Methods are used to connect Customer Sites to the Vodafone’s optical network, summarised in the table below. Availability of the access types may vary by location. Vodafone will confirm the available access circuits and bandwidths available to Customer on request and as set out in the Order Form.

Access Method	Access Type	Description
On-net	Optical Standard	This access provides the lowest installation cost solution but provides limited ability to add new services
On-net	Optical Enhanced	This access has a slightly higher installation cost but provides the customer with the option to add further services
Access Method	Access Type	Description
		at similar speeds without the need for significant new equipment to be installed at the customer site
Third Party Fibre	Third Party	Third party access uses fibre to support fixed bandwidths, typically at speeds of 100Mbps, 1Gbps or 10Gbps
BT OpenReach EAD	EAD	BT Openreach EAD is an access method in the UK offering interfaces at 100M, 1G and 10G

Where Vodafone connects a Customer Site via Third Party Service feature restrictions may apply.

Dedicated Ethernet Service



Service Specification

Where dual access is provided using Third Party Provider access circuits, Vodafone cannot guarantee end-to-end diversity of the access circuits.

8. Defined terms

Backbone means the Optical Backbone Core and related infrastructure beyond the Optical Backbone Core.

Class(es) of Service or **CoS** means the classes of Service used to prioritise network traffic.

Committed Information Rate or **CIR** means the guaranteed amount of bandwidth that can be transmitted across the Customer-facing port on the Equipment. CIR traffic is policed at the UNI. If the ingress traffic speed is greater than the CIR then the traffic will not be transmitted through the network **Core Service Element(s)** means the core elements of a Service package as set out in the Service Specification.

CoS Allocation means the bandwidth limits allocated to each CoS set out in an Order.

Customer Equipment means hardware or software not owned or provided by Vodafone, which is used with the Service (excluding the Router).

Customer Provided Access or **C.P.A.** means the Customer procures the connectivity between the Customer Site and a Vodafone PoP. Vodafone has no responsibility for this connectivity, particularly the performance, availability or reporting thereof.

Customer Site means a Customer's premises which Vodafone needs to access in order to provide the Service or the location where the Service is to be provided, as set out in the Order.

Default CoS means the lowest priority traffic in Vodafone's network and is deprioritised compared to other traffic.

Ethernet Virtual Circuit or **EVC** means a point to point logical connection provided by Vodafone across the Vodafone packet optical network which associates two Service Demarcation Points with each other.

Extended Information Rate or **EIR** means the non-guaranteed amount of bandwidth that can be transmitted across the Customer-facing port on the Equipment. Excess Information Rate (EIR) traffic is regarded as not guaranteed and is delivered on a best effort basis sharing available bandwidth in the core of the network. Excess Information Rate traffic is policed at the UNI and if the ingress traffic speed is greater than the EIR then the traffic will not be transmitted through the network.

Incident means any fault, incident or problem which affects the Service provided to Customer, excluding any fault, incident or problem with any other Vodafone service purchased under separate service terms.

MTU means the **Maximum Transmission Unit** and is the maximum transmittable packet size that can be used.

Network Access Method(s) means the access method or methods which connect the Customer Sites to the optical network as more specifically described in the Service Specification.

NTE (Network Terminating Equipment) means Equipment used to terminate a Customer connection where Customer has Ethernet access or a local internet access provider's device where Customer has Secure Internet Site Access.

OAM (Operations, Administration and Maintenance) are the processes, activities, tools, and standards involved with operating, administering, managing and maintaining a telecommunication network.

Dedicated Ethernet Service



Service Specification

Off-Net Service means a Service that does not use Vodafone's network, is procured from a Third Party Provider and is contracted through Vodafone.

Optical Backbone Core means Vodafone's optical network platform.

Optional Service Element(s) means the elements of the Service which are optional as set out in the Service Specification.

Planned Works has the meaning set out in the Service Terms and the Support Service Specification.

Premium CoS means the highest priority traffic in Vodafone's network and is prioritised over all other traffic.

Service Demarcation Point means the handoff between the Customer and Vodafone at the Customer Site and is the Customer-facing port on the Equipment.

Service Level(s) means the service levels which apply to the provision of the Service as set out in the Service Level Agreement.

Service Level Agreement means the service level agreement detailing the service levels for the Dedicated Ethernet Services contained in the Service Terms.

Standard CoS is a lower level of CoS than Premium CoS in Vodafone's network but higher than default CoS.



Service Levels

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 in 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: (i) use reasonable endeavours to give the Customer as much notice as reasonably possible of any Outage, which will affect the availability of the Service; and (ii) use reasonable endeavours to minimise the number of Outages and any subsequent disruption to the Customer. 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.

2. Severity Levels

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

Severity Level	Severity Level definitions
1	A total loss of the Service at a 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. For example: (a) if the Customer has ordered a service, loss at one or more Customer Sites (meaning a loss of any of the primary, secondary, or backup access circuits); or (b) loss of capacity.
3	Degradation of Service performance, or a Severity Level 1 or 2 Incident where Vodafone has been denied access to the Customer Site, or where Vodafone has been unable to make an Outage (for reasons outside of Vodafone’s reasonable control) to restore normal service.
4	A non-Service affecting Incident or Incidents not classed as Severity level 1, 2, or 3 Incidents. For example, an Incident with performance reporting.

3. Service Levels

3.1 Availability

- (a) **Measure:** The availability of the of the Service will be measured as the percentage of time the Service is available at the Service Demarcation Point of each Customer Site in a Monthly Measurement Period for the relevant Service classification type and Customer Site configuration.
- (b) **Calculation:** The percentage Service availability at the Service Demarcation Point of each Customer Site will be calculated as follows: $(A - B \times 100\%) / A$. Where:
- (i) “A” equals the number of whole minutes in the relevant Monthly Measurement Period;
 - (ii) “B” equals the number of whole minutes during which the Service is Unavailable in the Monthly Measurement Period, excluding time where the Service is Unavailable due to an Excluded Event; and
 - (iii) “Unavailable” or “Unavailability” means a Customer Site cannot exchange data with another Customer Site.



Service Levels

- (c) **Service Classification and Target Availability:** The Service Levels may vary depending on the Service classification specified in the Commercial Terms and/or Order. The availability targets set out in the table below shall apply to each Access Circuit making up the following Service classification, and not for the overall Service configuration. Where a Service configuration consists of a number of links, each with a different Service classification, the lowest Service Availability will apply across all links:

Service Classification	Service Availability	Unavailable Minutes*
Unprotected end to end	99.3%	306.6 minutes
Unprotected access and protected Core	99.7%	131.4 minutes
Protected access and protected Core	99.95%	21.9 minutes
Dual homed access protected end to end	99.99%	4.38 minutes
Dual diverse paths	99.995% (Customer Site objective)	2.2 minutes
*The number of minutes during the Monthly Measurement Period that a Service may be Unavailable before the Service Level is not met, based on an average measurement of 43800 minutes per Monthly Measurement Period.		

3.2 Incident Resolution Times

- (a) **Calculation:** The Incident Resolution time shall be calculated as the number of whole hours between the time Vodafone Acknowledges a Severity Level 1 or 2 Incident and the time Vodafone confirms to the Customer that the Incident is Resolved. Vodafone will be deemed to have advised the Customer of the Resolution of the Incident 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.
- (b) **Target Incident Resolution Times:** Vodafone will use reasonable endeavours to Resolve an Incident within the target time of 4 hours with the exception of the Service in the table below which will have the following Incident Resolutions times:

Service	Target Incident Resolution Times
Protected circuits	seven (7) hours for restoration of protection

4. Service Credits

4.1 General

- (a) The Customer must claim all Service Credits via the Vodafone account manager within 30 days of the end of the Monthly Measurement Period. Any Service Credits will be applied to the Customer's next bill after agreement that such Service Credits are due.
- (b) The Customer shall not be entitled to Service Credits for any failure or delay in performing the Service that arises out of, or in connection with: (i) intermittent Incidents which do not prevent the use of the Services; (ii) performance reporting; or (iii) an Excluded Event.
- (c) The total Service Credits payable in any given Monthly Measurement Period shall not exceed 100% of the Recurring Charge for the affected Customer Site.
- (d) 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.
- (e) Any Service Credits will be applied to the Customer's next bill after agreement that such Service Credits are due.
- (f) 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.



Service Levels

- (g) No Service Credit is payable where Recurring Charges are waived.
- (h) Other than as set out in this clause 4, Vodafone shall have no additional liability to the Customer in relation to under-performance or Unavailability of any circuit.

4.2 Service Credits for Availability

- (a) Service Credits for availability shall be calculated based on actual Customer Site availability during the Monthly Measurement Period for the applicable Service classification in accordance with the tables below. Any Service Credits for availability will be a percentage of the monthly Recurring Charge of the affected Customer Site for the applicable Monthly Measurement Period.
- (b) Availability at the Service Demarcation Point per Customer Site for the applicable Service classification:

Service classification	Customer Site availability (Unprotected end to end)	Service Credits available (Percentage of monthly Recurring Charges)
Unprotected end to end	99.29 to 99.00%	1%
	98.99 to 98.75%	3%
	98.74 to 98.50%	5%
	98.49 to 98.25%	10%
	98.24% and below	25%
Unprotected access and protected Core	99.69 to 99.60%	3%
	99.59 to 99.50%	5%
	99.49 to 99.40%	15%
	99.39% and below	30%
Protected access and protected Core	99.949 to 99.89%	3%
	99.89 to 99.80%	5%
	99.79 to 99.70%	10%
	99.69 to 99.50%	20%
	99.49% and below	40%
Dual homed access, protected end to end	99.989 to 99.89%	3%
	99.89 to 99.80%	5%
	99.79 to 99.70%	15%
	99.69 to 99.50%	25%
	99.49% and below	50%
Dual diverse paths	99.994% to 99.991%	1%
	99.99 to 99.89%	3%
	99.89 to 99.80%	5%
	99.79 to 99.70%	15%
	99.69 to 99.50%	25%
	99.49% and below	50%

4.3 Service Credits for Incident Resolution Times

- (a) The Service Credit for Incident Resolution shall be a percentage of the Recurring Charge for the applicable Monthly Measurement Period for the affected Service component thereof and shall vary



Service Levels

depending on the number hours beyond the target Incident Resolution time that the Incident remains unresolved as set out in the table below:

Number of hours beyond the target Incident Resolution time	Service Credits available
Between 1 and 15 hours inclusive rounded up to the nearest hour	5%
16 to 48	15%
49 to 119	25%
120 to 167	50%
168 or more	100%

- (b) For the avoidance of doubt, no Service Credits for Incident Resolution shall apply to the Tiered Support Services, whether or not such support services are provided within or outside the targeted Resolution times set out in the Tiered Support Service Specific Terms

4.4 Service Credits for Delay

- (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 Hard Configuration Change to an existing Customer Site, due to an act or omission of Vodafone, calculated in accordance with the following table:

Delay in Agreed Delivery Date of:	Number of Working Days	Service Credit (% of the Installation Charge/relevant Configuration Change Charge)
New Customer Site or Hard Configuration Change	1 to 10	5%
	11 to 20	20%
	>20	25%

- (b) Vodafone's total liability for the applicable Service Credit shall not exceed:
- (i) for delay of the Service Commencement Date (past the Agreed Delivery Date) for a new Customer Site: 25% of the Installation Charge for that Customer Site; or
 - (ii) for delay of the Service Commencement Date (past the Agreed Delivery Date) for a Hard Configuration Change: 25% of the charge for that Hard Configuration Change.
- (c) The Service Credit for the delay to a new Customer Site will be: (a) determined by the number of whole Working Days that the Service Commencement Date of the Service passes beyond the Agreed Delivery Date for a Customer Site; and (b) calculated as a percentage of the relevant affected Customer Site's Installation Charge as set out in the Commercial Terms and/or Order.
- (d) The Service Credit for the delay to a Hard Configuration Change will be: (a) determined by the number of whole Working Days that the Service Commencement Date of the Configuration Change passes beyond the Agreed Delivery Date; and (b) calculated as a percentage of the relevant affected Customer Site charge for the Hard Configuration Change agreed pursuant to the Service Change Request Procedure or the Recurring Charge.
- (e) The Installation Charge referred to in this clause 4.3(b) will: (a) include Vodafone's standard Charges; and (b) exclude any additional Charges due to specific Customer Site requirements, for example additional construction charges, as specified in the Commercial Terms and/or an Order.

5. Assumptions and exclusions

- 5.1 Where requested by Customer, Vodafone will use reasonable efforts to meet an expedited delivery date and Customer will pay Vodafone any applicable Charges for doing so in accordance with the Commercial Terms and/or Order.



Service Levels

5.2 “Off Net Services”

Vodafone, in agreement with the Customer, may re-sell a Service from a Third Party Provider which does not use any of Vodafone’s network, i.e. it is an “Off-Net Service”. In this instance Vodafone would not have visibility of the Service and hence, the Service Levels and Service Credits detailed above shall not be applicable. Details of the Service and associated alternative Service Levels (if any) may be provided on request from the Customer and would be subject to triage times as between Vodafone and any applicable Third Party Provider.

Dedicated Ethernet Service

Definitions



The following definitions are applicable to the Services:

Access Circuit	the network connection provided between the Service Demarcation Point at the Customer Site and the ingress/egress port of the Vodafone optical transmission network.
Acknowledged	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.
Configuration Change(s)	any Hard Configuration Change and/or any Soft Configuration Change, that is not a Standard Change.
E-Line Services	together, Ethernet Private Line (EPL) and Ethernet Virtual Private Line (EVPL) which are each types of the Vodafone Dedicated Ethernet Service and are further detailed in the Service Specification
Ethernet Private Line (EPL)	a type of the Vodafone Dedicated Ethernet Service further detailed in the Service Specification
Ethernet Virtual Private Line (EVPL)	a type of the Vodafone Dedicated Ethernet Service further detailed in the Service Specification
Excluded Event	any of the following: <ul style="list-style-type: none">(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;(f) 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;(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;(l) 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



Definitions

	<p>third party who is not controlled by Vodafone; or (ii) in fibre that is not owned or operated by Vodafone) and any submarine cable breaks;</p> <p>(m) where a Service Credit is claimed for late repair, the Unavailability period relevant to this claim, will be excluded from the Service Availability calculation;</p> <p>(n) a fault or incident caused by failure at any other Customer Site;</p> <p>(o) 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> <p>(p) any delay attributable to a Freeze Period; or</p> <p>(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.</p>
Hard Configuration Change	<p>a change to the Service that may include one or more of the following:</p> <p>(a) transfer of the Service from one Customer Site to another;</p> <p>(b) migrating between physical service access options (including port speed or port type);</p> <p>(c) modifications requested by Customer to alter the Service at a Customer Site requiring physical intervention; and/or</p> <p>(d) physical movement of a Customer Site or removing a Customer Site from the Service.</p>
Incident	<p>any fault, incident, or problem which affects the Service provided to the Customer, excluding any fault, incident or problem with a service purchased under separate Service Specific Terms, and notified to Vodafone.</p>
Monthly Measurement Period	<p>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 which will be beginning of the calendar month up to the termination date or expiry of the Service).</p>
NTE	<p>the Equipment to terminate the Customer's connection.</p>
Optical Service	<p>a type of the Vodafone Dedicated Ethernet Service further detailed in the Service Specification</p>
Outage	<p>a temporary interruption in service as further defined in clause 1.2 of the Service Levels.</p>
PSTN	<p>the public switched telecommunications network.</p>
Resolve or Resolution	<p>the exercise by Vodafone of its reasonable endeavours to repair the root cause of an Incident, or to implement a workaround.</p>
Service Credits	<p>the service credits payable by Vodafone to Customer in accordance with these Service Specific Terms.</p>
Service Demarcation Point	<p>the NTE or the service interface of the Access Circuit.</p>

Dedicated Ethernet Service



Definitions

Service Level(s)	the service levels which apply to the provision of the Service as set out in the Service Levels.
Severity Level	the categorisation (as described in clause 2.1 of the Service Levels) of the severity of an Incident as determined by Vodafone in its discretion.
Soft Configuration Change	a change to the Service that does not constitute a Hard Configuration Change; including the modification of the configuration of the Customer's circuit at Customer's request that is not classified as a Hard Configuration Change.
Standard Change	a pre-approved change that is low risk, relatively common and follows a procedure or work instruction.