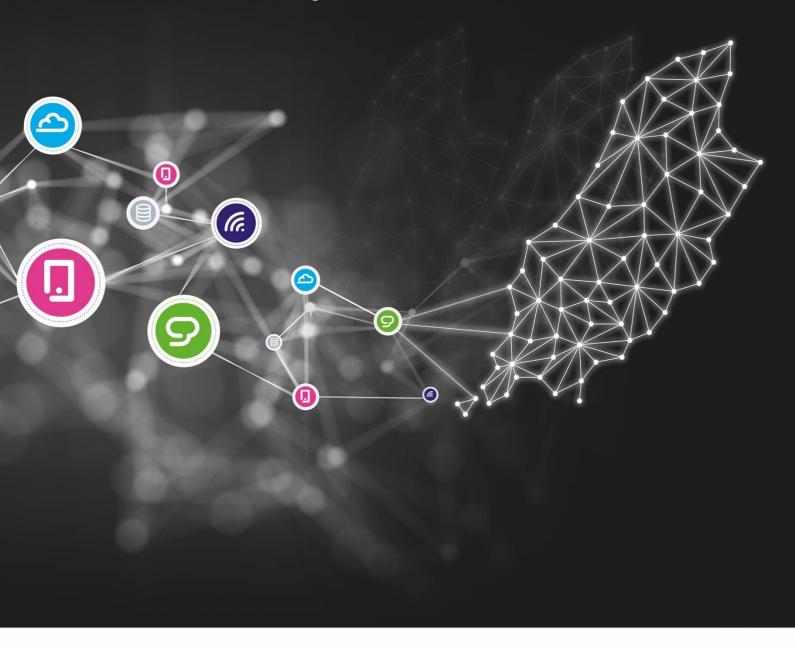
Service Description –

Carrier Ethernet on Island Connectivity Services



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INTERPRETATION & ADDITIONAL DEFINITIONS 1.

- 1.1 Unless the context otherwise requires, terms and phrases defined in the General Terms & Conditions and the MT Services Order Form and the associated Fees List will have the same meaning when used in this Services Description.
- 1.2 In addition to Paragraph 1.1, the terms and phrases provided below will have the same meanings when used in each of the General Terms & Conditions and the MT Services Order Form:

"Availability" means the availability of a resource expressed as a percentage, which is calculated as follows:

availability = $A - B \times 100$

Where:

A = The number of hours in the Relevant Measurement Period for the resource.

B = The number of hours in the Relevant Measurement Period when the resource was unavailable, the measurement of such unavailability will exclude any period during which an Excluded Event occurs;

"Connecting Point" means a block terminal, a socket for a removable plug, a distribution frame, or any other device, supplied, installed and maintained by MT in the Customer's premises or End User's premises to facilitate the connection of Customer Equipment or Service Equipment to any MT service;

"End User" means Manx Telecom's customer

"Excluded Event" includes

- a planned, temporary interruption in the availability of any element of the Services to enable MT to carry out essential maintenance or upgrades to any element of the Services; or
- all regular maintenance windows reasonably required by any Third Party Telecommunications Suppliers; or
- the failure by any Third-Party Telecommunications Suppliers to provide any services to MT.

"General Terms & Conditions" means Manx Telecom's general terms and conditions that together with the associated Services Order Form (including this Services Description) provide the terms and conditions upon which MT will provide the Services to the Customer;

"Fault" means when either Party has reason to suspect that the Services are not being delivered in accordance with the Service Levels;



















"Fault Management" means MT's recording of each Fault reported by the Customer, the resulting technical support actions taken to resolve each Fault and communication of such resolution to the Customer;

"Fault Reporting Telephone Number" means the telephone number allocated to the Service Provider which is their dedicated fault reporting telephone number;

"Fault Reporting Procedure" means the provision by the Customer to MT of the Minimum Fault Information with respect to a Fault by means of telephone to the Fault Reporting Telephone Number, or as may be mutually agreed by the Parties in writing;

"Licence" means any licence (including that licence as from time to time amended) granted or having effect as if granted under the Telecommunications Act 1984 (of Tynwald), or any replacement or re-enactment of any of them, or any similar licence;

"MT's Licensed Area" means the Isle of Man;

"Carrier Ethernet Failure" means any failure of the Carrier Ethernet Services causing continuous loss of the ability for data to be sent over the Service, other than as a result of MT's suspension of such services under any provision of this Services Description and/or the Framework Agreement;

"Carrier Ethernet Services" means a terrestrial telecommunication service, (other than by means of one of MT's public switched telecommunication systems) provided between two or more specified points which are within MT's Licensed Area;

"Recurring Fees" means the recurring fees for each Carrier Ethernet Service as provided in more detail in the relevant Services Order Form

"Relevant Measurement Period" means per annum;

"Service Credit" means the calculation as detailed within Paragraph 8.5 of this Services Description, applied to the portion of annual Recurring Fees within MT's Licensed Area.

"Service Levels" means the Service Levels provided in Paragraphs 7.1 and 7.2 and 7.3;

"Services" means each of the Carrier Ethernet Services listed in the Services Order Form;

"SLA" means the Service Level Agreement as provided in more detail in Paragraphs 7 to 9 of this Services Description;



















"we", "us", "our" and "MT" means the functions within Manx Telecom Trading Limited providing retail services within MT's Licensed Area

2. CARRIER ETHERNET SERVICES

2.1 Overview

Carrier Ethernet Services provide dedicated bandwidth between two or more end points within MTW's Licensed Area. Service is comprised of a number of access circuits, at the required bandwidth, connected to a User Network Interface on the Carrier Ethernet Network. Service is available Island-wide. Access circuits connecting to the CEN at Douglas and Castletown nodes will be classed as metro connections and those connecting to other nodes will be classed as non-metro within the fees list.

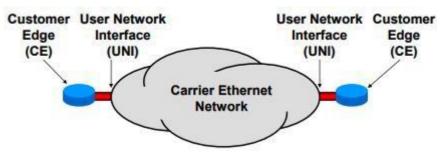


Figure 1: Ethernet Services Model

Four service options are available:

- Port Based Ethernet Private Line (EPL)
- Port Based Ethernet Private Local Area Network (EP-LAN)
- Virtual LAN Based Ethernet Virtual Private Line (EVPL)
- Virtual LAN Based Ethernet Virtual Private Local Area Network (EVPL-LAN)

Service Type		VLAN-based (EVC identified by VLAN ID)
E-Line (Point-to-Point EVC)	Ethernet Private Line (EPL)	Ethernet Virtual Private Line (EVPL)





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E-LAN Ethernet Private LAN (EP-LAN) Ethernet Virtual Private LAN (EVP-(Multipoint-to- Multipoint LAN)

EVC)

A maximum of 256 end user sites that can terminate on one UNI.

All Carrier Ethernet Services are agnostic to customer/End User IP applications. For detailed guidance literature on Ethernet service attributes, parameters and values, please refer to the Metro Ethernet Forum (MEF).

2.2 Ethernet Private Line (EPL)

Ethernet Private Line (EPL) provides a Point-to-Point Ethernet Virtual Connection (EVC) between two sites as illustrated in Figure 2.

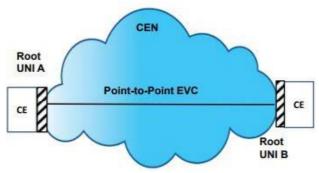


Figure 2: EPL Service Type using Point-to-Point EVC

EPL provides point-to-point uncontended symmetrical bandwidth between two User Network Interfaces (UNIs).

EPL Service uses a point-to-point EVC between two UNIs and provides a high degree of transparency for Service Frames between the UNIs it interconnects, such that most fields in each Service Frame are identical at both the source and destination UNI when the Service Frame is delivered.

EPL Service does not allow Service Multiplexing i.e. dedicated UNIs are used for the Service. Because of the high degree of transparency of this Service, there is no need for coordination between the End User, Service Provider and MTW on a detailed CE- VLAN ID/EVC Map for each UNI, because all Service Frames are mapped to a single EVC at the UNI. The port speed is aligned with the bandwidth of the service taken for any given end-user leg.

















Table 1 provides the UNI Service Attributes, parameters, and values for the Ethernet Private Line.

UNI Service Attribute	Service Attribute Parameters and Values
Service Multiplexing	Disabled
Bundling	Disabled
All to One Bundling	Enabled
CE-VLAN ID / EVC Map	All CE-VLAN IDs map to the EVC
Max number of EVCs	1

Table 1: UNI Service Attributes and parameters for the EPL Service

Table 2 provides the EVC per UNI Service Attributes, parameters, and values for the Ethernet Private Line (EPL) Service.

EVC per UNI Service Attribute	Service Attribute Parameters and Values
Egress Bandwidth Profile	N/A
Source Mac Address Limit	Disabled

Table 2: EVC per UNI Service Attributes and parameters for the EPL Service

Table 3 provides the EVC Service Attributes, parameters, and values for the Ethernet Private Line (EPL) Service.

EVC Service Attribute	Service Attribute Parameters and Values
EVC Type	Point-to-Point
UNI List	Root
Max number of UNIs	2
Unicast Service Frame Delivery	Unconditional
Multicast Service Frame Delivery	Unconditional
Broadcast Service Frame Delivery	Unconditional
CE-VLAN ID Preservation	Enabled
CE_VLAN CoS Preservation	Enabled

Table 3: EVC Service Attributes and parameters for the EPL Service











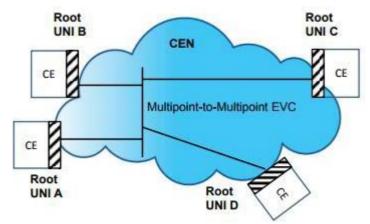






1.1 **Ethernet Private LAN (EP-LAN)**

Ethernet Private LAN (EP-LAN) provides a multipoint-to-multipoint EVC between multiple sites. A pictorial representation of EP-LAN is provided in Figure 3.



EP-LAN can be defined to provide multipoint-to-multipoint bandwidth with performance assurances between the UNIs.

Service multiplexing can occur at none, one, or more than one of the UNIs in the EVC. For example, an E-LAN Service Type (Multipoint-to-Multipoint EVC) and an E- Line Service Type (Point-to-Point EVC) might be service multiplexed at the same UNI.

The EP-LAN Service is defined to provide CE-VLAN tag preservation. Each interface is configured for All to One Bundling, supporting CE-VLAN ID preservation. In addition, EP-LAN supports CE-VLAN CoS preservation.

Table 4 provides the UNI Service Attributes, parameters, and values for the EP-LAN Service.

UNI Service Attribute	Service Attribute Parameters and Values
Service Multiplexing	Disabled
Bundling	Disabled
All to One Bundling	Enabled
CE-VLAN ID / EVC Map	All CE-VLAN IDs map to the EVC
Max number of EVCs	1

Table 4: UNI Service Attributes and parameters for the EP-LAN Service

Table 5 provides the EVC per UNI Service Attributes, parameters, and values for the EP-LAN Service.

















EVC per UNI Service Attribute	Service Attribute Parameters and Values
Egress Bandwidth Profile	N/A
Source Mac Address Limit	Disabled

Table 5: EVC per UNI Service Attributes and parameters for the EP-LAN Service

Table 6 provides the EVC Service Attributes, parameters, and values for the EP-LAN Service

EVC Service Attribute	Service Attribute Parameters and Values
EVC Type	Multipoint-to-Multipoint
UNI List	Root
Max number of UNIs	=>3
Unicast Service Frame Delivery	Conditional
Multicast Service Frame Delivery	Discard or Deliver Unconditionally or Deliver Conditionally
Broadcast Service Frame Delivery	Unconditional
CE-VLAN ID Preservation	Enabled
CE_VLAN CoS Preservation	Enabled

Table 6: EVC Service Attributes and parameters for the EP-LAN Service

1.1 **Ethernet Virtual Private Line (EVPL)**

An Ethernet Virtual Private Line (EVPL) can be used to create Services similar to Ethernet Private Line (EPL) with the added capability to map a CE-VLAN ID to a given EVC at a UNI. Depending on the value of the bundling attribute, one or more CE-VLAN IDs can be mapped to an EVC. EVPL can filter some L2CP Service Frames with certain destination addresses.

With the service multiplexing attribute set to enabled, more than one Ethernet Service can be supported at

When more than one EVC is supported at a UNI with the service multiplexing attribute set to enabled, then the EVC Types for other EVCs can be Point-to-Point or Multipoint-to-Multipoint. Figure 4 shows a use case of connecting to a hub location at UNI A with EVPL'x' at UNI B and with EVPL'y' at UNI C.





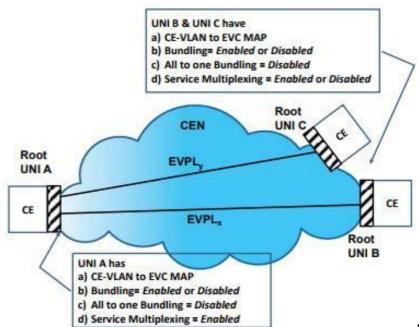


Figure 4; Example use case of

EVPL Services

Table 7 provides the UNI Service Attributes, parameters, and values for the Ethernet Virtual Private Line (EVPL).

UNI Service Attribute	Service Attribute Parameters and Values	
Service Multiplexing	Enabled	
Bundling	Enabled or Disabled	
All to One Bundling	Disabled	
CE-VLAN ID / EVC Map	Minimum of 1 CE-VLAN IDs map to each EVC	
Max number of EVCs	Minimum of 1	

Table 7: UNI Service Attributes and parameters for EVPL Service

Table 8 provides the EVC per UNI Service Attributes, parameters, and values for the Ethernet Virtual Private Line (EVPL).

EVC per UNI ServiceAttribute	Service Attribute Parameters and Values
Egress Bandwidth Profile	None or Parameters with Bandwidth Profile
Source Mac Address Limit	Disabled



















Table 8: EVC per UNI Service Attributes and parameters for EVPL Service

Table 9 provides the EVC Service Attributes, parameters, and values for the Ethernet Virtual Private Line (EVPL).

EVC Service Attribute	Service Attribute Parameters and Values
EVC Type	Point-to-Point
UNI List	Root
Unicast Service Frame Delivery	Unconditional
Max number of UNIs	2
Multicast Service Frame Delivery	Unconditional
Broadcast Service Frame Delivery	Unconditional
CE-VLAN ID Preservation	Enabled or Disabled
CE_VLAN CoS Preservation	Enabled or Disabled

Table 9: EVC Service Attributes and parameters for the EVPL Service

1.1 **Ethernet Virtual Private LAN (EVP-LAN)**

An Ethernet Virtual Private LAN (EVP-LAN) can be used to create a network of connected UNIs, whilst enabling services to be accessed from one or more of those UNIs. An example of such a UNI is an End User site that wants to access a public or private IP Service from a UNI that is also used for E-LAN Service Type among the End User's other locations.

Figure 5 shows an example of the basic structure of EVP-LAN Service. In this example, the End User has an EVP-LAN Service (solid black line for the EVC), associating UNIs A, B, C and D, for providing multipoint connectivity, and an EVPL Service (dashed red line for the EVC), associating UNI B and UNI E, for accessing a specific service from UNI E. UNI B has Service Multiplexing capability to support greater than one EVC.

















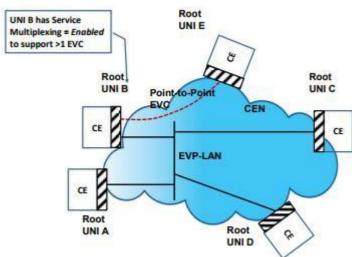


Figure 5: Ethernet Virtual Private LAN (EVP-

LAN) Service

Table 10 provides the UNI Service Attributes, parameters, and values for the EVP- LAN Service.

UNI Service Attribute	Service Attribute Parameters and Values
Service Multiplexing	Enabled
Bundling	Enabled or Disabled
All to One Bundling	Disabled
CE-VLAN ID / EVC Map	Minimum of 1 CE-VLAN IDs map to each EVC
Max number of EVCs	Minimum of 1

Table 10: UNI Service Attributes and parameters for the EVP-LAN Service.

Table 11 provides the EVC per UNI Service Attributes, parameters, and values for the EVPLAN Service.

EVC per UNI Service Attribute	Service Attribute Parameters and Values
Egress Bandwidth Profile	None or Parameters with Bandwidth Profile
Source Mac Address Limit	Enabled or Disabled

Table 11: EVC per UNI Service Attributes and parameters for the EVP-LAN Service.

Table 12 provides the EVC Service Attributes, parameters, and values for the EVP- LAN Service.



















EVC Service Attribute	Service Attribute Parameters and Values
EVC Type	Multipoint-to-Multipoint
UNI List	Root
Max number of UNIs	=> 3
Unicast Service Frame Delivery	Conditional
Multicast Service Frame Delivery	Discard or Deliver Unconditionally or Deliver Conditionally
Broadcast Service Frame Delivery	Unconditional
CE-VLAN ID Preservation	Enabled or Disabled
CE_VLAN CoS Preservation	Enabled or Disabled

Table 12: EVC Service Attributes and parameters for the EVP-LAN Service

1. SHORT TERM TEMPORARY SERVICE

1.1 Temporary provision of service is available upon request for special events when additional capacity or services are required for a short period of time.

All short term temporary contracts for Carrier Ethernet service are charged on the following basis: -

Connection charge: applies in full plus any non-standard connection fees. Rental: 1st month or part thereof is charged at 2/10ths of the annual rental. Subsequent months or part thereof are charged at 1/10th of the annual rental.

Please refer to fees list for the appropriate connection & rental fee

2. ADDITIONAL CUSTOMER SPECIFIC RESPONSIBILITES

- The Customer must provide at the Customer's expense a suitable mains electricity supply at points and with the connections specified by MT, to enable MT to provide the Service.
 - 2.2 Any Customer Equipment to be connected for use with the Service will be connected by means of Connecting Points except where MT otherwise permits for operational reasons.

The Equipment must not be used with a Service except in accordance with MT's appropriate Service Description terms for the Attachment of Customer's Equipment to MT's Telecommunications Systems detailed within Attachment One to this Services Description. In addition, the Customer must not allow any other person to do any of the things forbidden by this Paragraph 4.2.

MT's RESERVED RIGHTS & ADDITIONAL FEES 2.

2.1 If the Customer applies for a Connecting Point to be moved to another position

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within the Customer's premises or End User's premises, then MT reserves the right to either:

- (a) require the Customer to terminate the Services to the existing Connecting Point and to submit a new Services Order Form involving the new Connecting Point; or
- (b) accept the Customer's application, and move the Connecting Point at the Customer's expense, calculated at MT's applicable hourly rate.
- 2.2 If the Customer cancels an application to move the Connecting Point, prior to the work being completed by MT, then MT reserves the right to require the Customer to pay an additional fee.
- 2.3 The aggregate amounts of applicable fees of any class or combination of classes may be included as a single item in the Customer's invoice.
- 2.4 The Network Terminating Equipment (NTE) is mains powered as standard. Should the Customer wish to consider providing a UPS or an alternative DC supply to the NTE, ALL work associated with the NTE power supply must be done in conjunction with MT engineering; calculated at MT's applicable hourly rate.
- 2.5 The Customer understands and accepts that during some fault conditions, during fault localisation and/or maintenance it may be necessary to withdraw service from all access circuits of a Point to Multi-Point end user network solution.
- **CONTACTS FOR ORDER/ FAULT REPORT PLACEMENT** 3.
- 3.1 New Orders, Cancellations & Changes should be sent via the Customer's MT Corporate Account Manager.
- 3.2 **Fault Management**

Customers should report faults to the MT Network Operations Centre (NOC) via their dedicated fault reporting number.

4. SERVICE LEVELS

- 4.1 Service Levels
- (a) The Availability specified in this Paragraph 7.1(a) applies only to those Carrier Ethernet Services located in MT's licensed Area.

The Carrier Ethernet Services Availability per annum will be 99.7%. Delivery & Fast Track MT will use its reasonable endeavours to provide Services at the Service Levels set out in this Section.

4.2 Provision of physical services

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Service	Action	Target lead time
Carrier Ethernet Physical	Install	8 Weeks
Carrier Ethernet Physical	Install Fast Track	4 Weeks
Carrier Ethernet Physical	End Shift	8 Weeks
Carrier Ethernet Physical	End Shift Fast Track	4 Weeks
Carrier Ethernet Physical	Modification	4 Weeks

Provision or Reconfiguration of logical services

Service	Action	Target lead time
Carrier Ethernet Logical (P2MP)	Install	4 Weeks
(MP2MP)		
Carrier Ethernet Logical (P2MP)	Install Fast Track	2 Weeks
(MP2MP)		

See fees list for fast track provisioning fees

4.3 **Fault Case Management Service Targets**

- (a) MT will endeavour to make the Network Operations Centre available twenty- four (24) hours per day, seven (7) days per week and three hundred and sixty- five (365) days per year.
- (b) In response to each fault case, MT will endeavour to:
 - (i) Respond to each fault case in accordance with the following target to clear times relevant to the priority classification of each fault (for the avoidance of doubt each of the timings shown below will commence from the time that a fault has been reported in accordance with Paragraph 8.2):

Standard Default SLA to clear faults - Service Care Level 2 (SCL2)

Service	Clear by	Time of cover	Bank Holidays	Fee



















Carrier Ethernet	Cleared by	Mon – Sat	Included	Nil
	17:00 on the	08:00 - 18:00		
	next working			
	day after the			
	day reported			

Out of hours attendance for SCL2 is available and is chargeable at the prevailing rate, please see fees list.

Optional SLA to clear faults – Service Care Level 1 (SCL1)

Service	Clear by	Time of cover	Bank Holidays	Fee
	Clear within 6hrs 24/7/365			Additional, see fees list

⁽ii) Escalate all Incidents not resolved in accordance with the target to clear time in accordance with the appropriate MT Support Process.

5. **Service Credits**

- 5.1 MT will use reasonable efforts to meet the Service Levels.
- 5.2 A Carrier Ethernet circuit will be deemed unavailable if data cannot be exchanged with that site, except if the circumstances giving rise to the unavailability arise out of, or in connection with, any of the following:
 - i. an Excluded Event; or
 - ii. a failure outside MTs Licenced Area.
- 5.3 If the Carrier Ethernet circuit is capable of exchanging data end to end, then the Carrier Ethernet Service will be deemed available.
- 5.4 The period of unavailability of any circuit will be measured from the time the Customer reports the unavailability to MT, in accordance with the Fault Reporting Procedure, and will end at the time when MT advises the Customer that the Service is again available for that circuit.
- 5.5 If MT fails to meet one of the Service Levels associated with any given circuit, then the Customer could be entitled (subject to the provisions of Paragraph 8.6) to claim the following Service



















Credits:

Daily Rate Rental Credit is the amount MT will credit the Customer for each whole or part day MT is late in providing the circuit or repairing a Service Failure and for each circuit affected.

The VAT exclusive monthly circuit rental will be multiplied by 12 and divided by 365 to arrive at the Daily Rate Rental.

The Daily Rate Rental will be multiplied by the number of days that the Customer is entitled to claim for. Any payment made will be based on the particular circuit rental only.

The Daily Rate Rental Credit will be applied as a rebate to the Customer's bill.

5.6 Service Credit Review Procedure

- (a) the Customer shall be entitled to the Service Credits referred to in this Services Description only if each of the following occurs:
 - MT (acting reasonably) confirms in writing that such Service Credits are payable following a formal investigation of the Incident; and
 - the Customer has requested each Service Credit in writing from MT within thirty (30) (ii) days of the end of the Relevant Measurement Period in relation to which the Service Credit is being claimed,
- (b) the Customer shall not be entitled to the Service Credits referred to in this Services Description if any of the following have occurred or have been deemed to have occurred by MT:
 - (i) the failure of the Service to meet a specific Service Level was caused by the actions or omissions of the Customer's employees or End Users or agents or representatives;
 - (ii) MT temporarily suspends the delivery of any element of the Services because MT reasonably believes it is necessary to do so for reasons of health, safety or the quality of any telecommunications services provided by MT to the Customer or any other MT
 - (iii) planned outages of and scheduled maintenance in accordance with Paragraph 9, failures in any end-to-end service out-with the portion of the Carrier Ethernet service used by the Customer, and any other Excluded Event or other event agreed in writing between the Parties;
 - (iv) any unavailability, incompatibility, delay in installation or other impairment of the Services that is caused by or results from the acts or omissions of the Customer, the Customer's End Users, the Customer's suppliers, any Associated Company of the Customer, or any agent, employee, subcontractor, or User;
 - (v) Incidents that occur due to the negligence of the Customer or any of its Associated Companies, or any agent, employee, subcontractor, or End Users or an event of Force Majeure as described in the General Terms & Conditions; and
 - (vi) if, for the avoidance of doubt, MT fails to meet the Incident Management Services



















Targets in relation to its delivery of the Incident Management Services.

5.7 Service Credit Award Procedure

For each Service Credit claim received by MT from the Customer that MT accepts (in accordance with the Service Credit Review Procedure) the value of such claim shall be credited to the Customer invoice for the next Relevant Measurement Period.

1. **MAINTENANCE**

- 1.1 MT will notify the Customer of either planned or emergency maintenance that will impact upon the Services by sending an email to the email address that the Customer provided on the Services Order Form, and will provide a description of the work taking place and its potential impact on the Services.
- 5.8 The Customer will be provided a minimum of seven (7) days' notice of any planned maintenance.
- 5.9 In case of emergency maintenance which will impact on the Services, MT will notify the Customer as soon as is reasonably possible after it has become aware that such emergency maintenance is necessary.

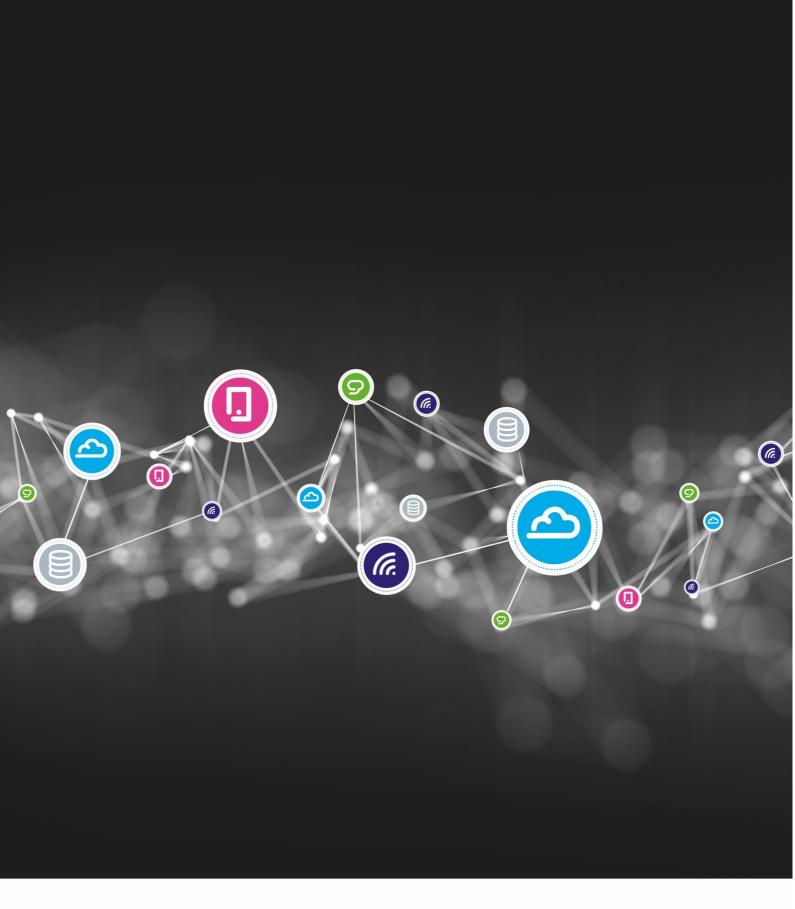
TERMINATION BY NOTICE 6.

- 6.1 At any time after the expiry of the Minimum Period, the Services Order Form can be terminated by the Customer by giving MT ninety (90) days written notice.
- 6.2 If the Customer terminates the Services Order Form and this Services Description during the Minimum Period, then the Customer must pay Manx Telecom all outstanding fees owed for the remainder of the contract in accordance with the Services Order Form.
- 6.3 The Carrier Ethernet Services Order Form and/or this Services Description can be terminated by MT at any time by giving the Customer ninety (90) days written notice.

7. **NON-COMPETE**

Clause 32.3 of the General Terms & Conditions shall not apply to the provision of these Carrier Ethernet Services.

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