

## **APPENDIX 2**

### **REQUIRED MODIFICATIONS TO SCHEDULE 1**

## **SCHEDULE 1**

### **Residential End-User Connection**

## SCHEDULE 1

### RESIDENTIAL END-USER CONNECTION

#### CONTENTS

<b><u>1. SCOPE</u></b>	<b>1</b>
<b><u>2. SERVICE LEVEL GUARANTEES</u></b>	<b>1</b>
<b><u>3. SERVICE DESCRIPTION AND ACCESS POINTS</u></b>	<b>4</b>
<b><u>4. ORDERING AND PROVISIONING PROCEDURE</u></b>	<b>6</b>
<b><u>5. RESIDENTIAL END-USER CONNECTION REQUEST</u></b>	<b>6</b>
<b><u>6. DELIVERY</u></b>	<b>9</b>
<b><u>7. RESPONSIBILITY AT DP AND OPENNET FDF</u></b>	<b>12</b>
<b><u>8. DEACTIVATION</u></b>	<b>12</b>
<b><u>9. STANDARD TERMS AND CONDITIONS</u></b>	<b>12</b>
<b><u>10. ACCESS AND APPROVALS REQUIRED</u></b>	<b>14</b>
<b><u>11. FAULT REPORTING AND CLEARING</u></b>	<b>14</b>
<b><u>12. SERVICE LEVEL AVAILABILITY</u></b>	<b>16</b>
<b><u>13. PROTECTION AND SAFETY</u></b>	<b>17</b>
<b><u>14. TERM OF LICENCE</u></b>	<b>17</b>
<b><u>15. SUSPENSION</u></b>	<b>17</b>
<b><u>16. TERMINATION OF LICENCE</u></b>	<b>18</b>
<b><u>17. REDUNDANCY SERVICE</u></b>	<b>20</b>
<b><u>ANNEX 1A: REQUEST FORM FOR RESIDENTIAL END-USER CONNECTION</u></b>	

## SCHEDULE 1

### RESIDENTIAL END-USER CONNECTION

***IDA Directed Modifications: The industry has requested for a diagram depicting the key features in OpenNet's network to be included in Schedule 1 (Residential End-User Connection). IDA agrees that there is merit in incorporating such a diagram, as it increases clarity in understanding OpenNet's ICO. Accordingly, IDA requires OpenNet to provide a diagram which shall include, at a minimum, demarcations of responsibilities at the following: the FDF at CO; Building MDF Room; FTTB Node; Distribution Point; Final Distribution Point and First Termination Point.***

#### 1. SCOPE

This Schedule 1 sets out the terms and conditions under which OpenNet will provide the Requesting Licensee with a licence for:

- (i) Layer 1 Service (a service provided by OpenNet for the use of passive optical fibre cable) from OpenNet's designated Central Office (or "CO") to the First Termination Point of a Residential Premise for the purpose of the Requesting Licensee providing GPON services; or
- (ii) Layer 1 Service from OpenNet's designated CO to the First Termination Point of a Residential Premise for the purpose of the Requesting Licensee providing OE services

**(Residential End-User Connection).**

1.1 The Residential End-User Connection is a service provided by OpenNet to the Requesting Licensee for the purpose of delivering GPON or OE services over the Layer 1 Services highlighted above to a Residential Premise at a:

- (a) Residential High Rise Building; or
- (b) Residential Landed House.

***IDA Directed Modifications: The industry had noted that as currently drafted, some types of residential properties are not captured by clause 1.1. As the intention is for OpenNet to serve all types of residential properties in Singapore pursuant to the provisions in Schedule 1 (Residential End-User Connection) of the ICO Agreement, IDA directs OpenNet to modify the definitions, such that they are aligned with the***

**definitions used in the Code. Accordingly, "Residential High Rise Building" in clause 1.1 should be replaced with that of "High-Rise Residential Building"; and "Residential Landed House" with that of "Landed Residential Building" or "Landed Residential Premise".**

1.2 This Schedule only applies to Requesting Licensees who are FBOs.

## **2. SERVICE LEVEL GUARANTEES**

2.1 OpenNet will provide the Service Level Guarantees in respect of Residential End-User Connection as set out in this Schedule. If OpenNet fails to meet any service activation period, Mean Time To Recovery or service level availability (collectively called the **Service Level Guarantees**) applicable to this Schedule and the failure to meet the Service Level Guarantees is solely caused by OpenNet, OpenNet will provide a remedy in the form of a rebate to the Requesting Licensee in accordance with:

- (i) Clause 6.10 and any terms and conditions contained in this Schedule in respect of request and provisioning timeframes;
- (ii) Clause 11.14 and any terms and conditions contained in this Schedule in respect of fault rectification timeframes; and
- (iii) Clause 12.1 and any terms and conditions contained in this Schedule in respect of service level availability.

***IDA Directed Modifications: There was general industry feedback received that OpenNet's obligation to provide a remedy in the form of a rebate should not be limited to failures to meet the Service Level Guarantees which are "solely caused by OpenNet".***

***In considering this point, IDA is of the view that it is justified for OpenNet to be made responsible also for the actions of its contractors and/or suppliers. This is because it is reasonable to expect OpenNet to have in place separate recourse or remedies against its own contractors and/or suppliers - for example, contractually negotiated provisions in the supply agreements with its contractors and/or suppliers - in the event of any default by such contractors and/or suppliers.***

***Accordingly, IDA directs OpenNet to modify clause 2.1 to make clear that OpenNet will still be liable to pay rebates to the Requesting Licensees where the failure to meet the***

***Service Level Guarantees is caused by any default by OpenNet's contractors and/or suppliers.***

2.2 A claim by the Requesting Licensee shall be made in writing within fourteen (14) Calendar Days of the completion of the relevant calendar month on which the Service Level Guarantees are measured. The amount in respect of any claim shall be paid to the Requesting Licensee in the form of a rebate. The Requesting Licensee acknowledges that a failure to make a claim within the specified timeframes under this paragraph means that the Requesting Licensee waives any entitlement to the Service Level Guarantee payment in respect of that claim.

***IDA Directed Modifications: The industry has commented that the fourteen (14) Calendar Day period for making claims is too short and should be extended to thirty (30) Calendar Days.***

***As IDA understands, in order for a Requesting Licensee to submit a claim for rebates for a failure by OpenNet to meet the Service Level Guarantees, such Requesting Licensee may need to refer to past information on Service Level Availability and other relevant fault details.***

***Moreover, given the fact that all Requesting Licensees who fail to meet the specified timeframe are automatically disentitled from rebates, even where there was a clear failure in meeting the Service Level Guarantees which would otherwise entitle them to those rebates, IDA considers it reasonable to extend the fourteen (14) Calendar Day claim period to thirty (30) Calendar Days. A period of thirty (30) Calendar Days will give Requesting Licensees reasonable time to make a claim and is unlikely to cause any material prejudice to OpenNet.***

***Accordingly, IDA directs OpenNet to modify clause 2.2 to allow up to thirty (30) Calendar Days for a claim to be made.***

2.3 If the Requesting Licensee is entitled to a rebate pursuant to the claim made hereunder, the amount of the rebate will be credited into the Requesting Licensee's account after it has been processed by OpenNet and will be reflected in OpenNet's bill to the Requesting Licensee in accordance with OpenNet's billing cycle.

2.4 The guarantee and rebates provided by OpenNet are:

- (i) of an ex-gratia nature and personal to the Requesting Licensee and are non-transferable; and

(ii) subject to this Schedule.

2.5 Despite anything to the contrary in this section, if the Requesting Licensee qualifies for any claim, OpenNet shall honour its obligations in respect of that claim but in the event of a dispute as to whether the Requesting Licensee qualifies for a claim or as to the quantum of the claim payable to the Requesting Licensee, the dispute shall be resolved in accordance with the Dispute Resolution Procedures in Schedule 17 of the ICO Agreement, or in the case of a Billing Dispute, in accordance with Schedule 16 of the ICO Agreement.

2.6 In addition to the specific terms and conditions of the Service Level Guarantees, the Service Level Guarantees shall not apply in any of the following circumstances:

***IDA Directed Modifications: Service Level Guarantees set out a supplier's commitment to provide services at an agreed quality and specify the level of rebate that the customer would be entitled to should the service not be provided at the quality agreed. Together with the rebate, they are essential elements to ensuring that the supplier has an incentive to either deliver service at a pre-agreed level of quality or compensate its customer accordingly.***

***As a general policy principle, IDA requires OpenNet to fully meet its Service Level Guarantees, which represent its commitment as to the quality of service that it will provide to Requesting Licensees. OpenNet should not be excused from its Service Level Guarantees owing to any suspension that is due to its fault.***

***Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 2.6(a), to provide that OpenNet should not be excused from its Service Level Guarantees owing to any suspension that is due to its fault.***

- (a) the Residential End-User Connection is disconnected and/or reconnected by reason of it being suspended under the terms and conditions of this Schedule or ICO Agreement;
- (b) fault due to any equipment, wiring and/or cabling owned or operated by the Requesting Licensee or on behalf of the Requesting Licensee;
- (c) provision or restoration of the Residential End-User Connection where any site-coordination meeting, Joint Investigation Meeting or fault identification coordination meeting is involved, or where OpenNet needs

to obtain or maintain any licence or permission necessary to the provision or restoration of the Residential End-User Connection;

***IDA Directed Modifications: Industry feedback was received that if a site-coordination meeting, Joint Investigation Meeting or fault identification coordination meeting is necessitated due to the fault of OpenNet or upon the request by OpenNet, and findings show that the fault lies with OpenNet, then the Service Level Guarantees should not be excluded.***

***As explained in IDA's directed modification to clause 2.6(a) above, Service Level Guarantees are essential elements to ensure that OpenNet has an incentive to either deliver service at a pre-agreed level of quality or compensate its customers accordingly.***

***In this respect, there should not be any incentive by which the Service Level Guarantees can be avoided through requests for coordination or investigation meetings.***

***As such, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 2.6(c), such that the Service Level Guarantees are not excluded on the basis of a site-coordination meeting, Joint Investigation Meeting or fault identification coordination meeting being required, provided that: (a) the fault was caused by OpenNet; and (b) the Requesting Licensees have not contributed to any delay in setting up these meetings.***

***At the same time, IDA considers it fair and reasonable that the actual time taken for arranging and conducting such meetings should be excluded in determining whether the Service Level Guarantees have been met. As a suggestion, OpenNet may toll the time taken commencing from the start of arranging the meeting up to the end of the meeting. IDA directs OpenNet to propose, for IDA's approval, a process to implement the requirements specified above.***

- (d) OpenNet has difficulty accessing or working in the building or Residential End-User's Premise due to the building or premise being inaccessible, in unsafe working condition or in any other inadequate or deficient state;
- (e) delay in the provision or restoration of the Residential End-User Connection caused by events beyond OpenNet's reasonable control;
- (f) OpenNet network outages for which the Requesting Licensee has not reported a fault;



***IDA Directed Modifications: As a matter of good practice and consistent with the requirements of the Code (see Section 2.2) which requires OpenNet to provide Mandated Services Information to the Requesting Licensees, the Requesting Licensees should be informed of any network outages affecting their Residential End-User Connections. Accordingly, IDA directs OpenNet to propose, for IDA’s approval, a provision to be included in this Schedule, providing that it will make such information available to Requesting Licensees in a manner that is easily accessible.***

- (g) fault is reported by the Requesting Licensee but no fault is found or confirmed by OpenNet;

***IDA Directed Modifications: For clarity, and to ensure that the Parties exercise due diligence in all fault reporting, IDA directs OpenNet to modify clause 2.6(g) to incorporate an obligation that OpenNet may only confirm that no fault is found after “due and careful investigation, and verification by OpenNet”.***

***It was suggested during the consultation that IDA should monitor the frequency in which OpenNet avoids applying the Service Level Guarantees by claiming “No Fault Found”, and that it should intervene where these cases are frequent. Unless IDA receives a well-founded complaint in relation to such an errant practice, IDA does not see a specific need for regulatory intervention to be laid down at this stage. Such monitoring by IDA could in fact be administratively cumbersome for the Parties involved and hamper the smooth and efficient running of OpenNet’s operations in service provisioning.***

***Notwithstanding, IDA will not hesitate to take appropriate enforcement measures if it detects any errant practice.***

- (h) OpenNet is required to carry out scheduled service interruption and the Requesting Licensee has been informed in accordance with clause 9.5; or
- (i) OpenNet is required to carry out fibre diversion at the request of the Government Agencies, private developers or other relevant parties.

***IDA Directed Modifications: As currently drafted, clause 2.6(i) is not subject to clause 9.5. Similar to clause 2.6(h), IDA considers it fair and reasonable that OpenNet should inform the Requesting Licensee prior to carrying out fibre diversion under clause 2.6(i) as the diversion has an impact on, and could result in a disruption to the Requesting Licensee’s Residential End-User Connection. Accordingly, IDA directs that clause 2.6(i) should be modified to be subject to clause 9.5.***

- 2.7 If the Requesting Licensee disputes OpenNet's reason for rejection, its records and/or the amount of rebate, the Requesting Licensee shall not be entitled to be credited with any rebate until and unless the dispute has been resolved.
- 2.8 A failure by OpenNet to meet any Service Level Guarantee does not constitute a breach of the ICO Agreement or this Schedule.
- 2.9 The Requesting Licensee acknowledges that the relevant remedy provided under clause 2.1 is a genuine pre-estimate of the Requesting Licensee's loss and will be the sole and exclusive remedy available to the Requesting Licensee for such failure to meet the relevant Service Level Guarantees for any Residential End-User Connection and shall be OpenNet's sole and exclusive liability to the Requesting Licensee for such failure.

### **3. SERVICE DESCRIPTION AND ACCESS POINTS**

- 3.1 (A) Where the Requesting Licensee requests for Residential End-User Connection for the purpose of providing GPON services to the End-User, OpenNet will provide a licence for Residential End-User Connection of 1:24 Split Ratio to the Requesting Licensee with the following:

***IDA Directed Modifications: The industry has commented that for clarity, there should be an explicit statement in this clause that OpenNet must use up all connections within the same splitter before provisioning an additional splitter.***

***IDA agrees that a splitter should be efficiently utilised to ensure that the corresponding GPON port installed by Requesting Licensee will reflect similar efficiency. Nonetheless, it will not be good practice to ensure all connections with the same splitter is utilised before adding a new splitter, given the need for some spare connections for operational and maintenance purposes as well as a reasonable lead time necessary for installation of an additional splitter. Accordingly, IDA directs OpenNet to modify Clause 3.1 to state the maximum level of connections that will be utilised within the same splitter before an additional splitter is provisioned.***

- (a) one (1) fibre strand from OpenNet's Fibre Distribution Frame (**FDF**) at the Central Office designated by OpenNet to OpenNet's splitter at the Building MDF Room for each group of twenty four (24) Residential Premises (or portion thereof);

- (b) one (1) dedicated fibre strand from the splitter to the First Termination Point of the Residential Premise;
- (c) one (1) Patching Service at OpenNet's FDF at the Building MDF Room; and
- (d) where necessary, one (1) Patching Service at OpenNet's FDF in the Central Office will be provided and the Requesting Licensee shall pay a Patching Charge in accordance with Schedule 15 (Charges).

3.1 (B) Where the Requesting Licensee requests for Residential End-User Connection for the purpose of providing OE services to the End-User, OpenNet will provide a licence for Residential End-User Connection of 1:24 Split Ratio to the Requesting Licensee with the following:

- (a) two (2) fibre strands from OpenNet's FDF at the Central Office designated by OpenNet to OpenNet's FDF at the Building MDF Room for each group of twenty four (24) Residential Premises (or portion thereof);
- (b) one (1) dedicated fibre strand to the First Termination Point of the Residential Premise from OpenNet's FDF at the Building MDF Room;
- (c) up to three (3) Patching Services at OpenNet's FDF in the Building MDF Room; and
- (d) where necessary, two (2) Patching Services at OpenNet's FDF in the Central Office will be provided and the Requesting Licensee shall pay a Patching Charge in accordance with Schedule 15 (Charges).

3.2 For a Residential End-User Connection of 1:1 Split Ratio for the purpose of providing either GPON services or OE services to the End-User, OpenNet will not provide any splitter at the Building MDF Room. OpenNet will provide:

- (a) one (1) dedicated fibre strand from OpenNet's FDF at the Central Office designated by OpenNet to OpenNet's FDF at the Building MDF Room;
- (b) one (1) dedicated fibre strand from OpenNet's FDF at the Building MDF Room to the First Termination Point of the Residential Premise;

- (c) one (1) Patching Service at OpenNet's FDF in the Central Office and the Requesting Licensee shall pay a Patching Charge in accordance with Schedule 15 (Charges).
- 3.3 (A) Where the Requesting Licensee requests for Residential End-User Connection of 1:24 Split Ratio for the purpose of providing GPON services to the End-User or Residential End-User Connection of 1:1 Split Ratio, the Requesting Licensee shall access the Residential End-User Connection at OpenNet's FDF at the Central Office designated by OpenNet and at the First Termination Point of the Residential Premise.
- 3.4 (B) Where the Requesting Licensee requests for Residential End-User Connection of 1:24 Split Ratio for the purpose of providing OE services to the End-User, the Requesting Licensee shall access the Residential End-User Connection at OpenNet's FDF at the Central Office designated by OpenNet, at OpenNet's FDF at the Building MDF Room and at the First Termination Point of the Residential Premise.

***IDA Directed Modifications: For consistency in referencing, IDA directs OpenNet to remove the sub-references "(A)" and "(B)" from clauses 3.3 and 3.4 respectively. Also, as the Requesting Licensee may be accessing the Residential End-User Connection either at OpenNet's FDF or Requesting Licensee's FDF at the Central Office depending on whether the Requesting Licensee is co-located at the same Central Office, the reference to "OpenNet's FDF at the Central Office designated by OpenNet" in clauses 3.3 and 3.4 should be amended to also include "Requesting Licensee's FDF at the Central Office designated by OpenNet".***

- 3.5 Where the Requesting Licensee wishes to acquire subsequent fibre connection from CO to Building MDF Room, the Requesting Licensee shall acquire such fibre connection in accordance with Schedule 5 (CO to Building MDF Room Connection).
- 3.6 Where the Requesting Licensee acquires a Residential End-User Connection of 1:24 Split Ratio for the purpose of providing OE services to the End-User, the Requesting Licensee shall ensure the Residential End-User Connection is connected to active Optical Ethernet equipment.

#### **4. ORDERING AND PROVISIONING PROCEDURE**

***IDA Directed Modifications: IDA notes the industry's comment that OpenNet should be required to provide information relating to OpenNet's network rollout, its coverage in***

*terms of premises reached, premises passed and all other relevant information that is to be provided by the OpenNet Platform. The above information must be made available to Requesting Licensees through manual processes even if the OpenNet Platform is not ready.*

*IDA agrees with the comment and finds it to be consistent with the provisions in the Code (see Section 2.2), which require OpenNet to make available to the Requesting Licensees Mandated Services Information. This will include information which Requesting Licensees will need before ordering services under the ICO.*

*Accordingly, IDA directs OpenNet to include a provision that it will make such information available to Requesting Licensees in a manner that is easily accessible. At a minimum, such Mandated Services Information should be accessible by the Requesting Licensees on OpenNet's website during the interim period prior to the implementation of the OpenNet Platform.*

4.1 The Requesting Licensee shall submit its request for Residential End-User Connection (**Request**) to OpenNet on a Business Day in the form of Annex 1A stating, but not limited to the following information:

- (a) the End-User's name, telephone number and address of the Residential Premise; and
- (b) the Split Ratio required;
- (c) whether the request is for the purpose of providing GPON or OE services to the End-User;
- (d) where applicable, the Transmission Tie Cable Port to which the Residential End-User Connection is to be connected at the Central Office.

***IDA Directed Modifications: For consistency of referencing, IDA directs OpenNet to remove the word "and" from the end of clause 4.1 (a) and insert "and" at the end of clause 4.1(c).***

4.2 Relocation of the Residential End-User Connection is not allowed. In the event that the Residential End-User has relocated, the Requesting Licensee shall submit a request for the termination of the existing Residential End-User Connection and request for a new Residential End-User Connection at the new Residential Premise in accordance with this Schedule.

- 4.3 Change of use from GPON to OE or from OE to GPON is not allowed. In the event the Residential End-User requires changes to its End-User services, the Requesting Licensee shall submit a request for termination of the existing Residential End-User Connection and request for a new Residential End-User Connection for the new purpose in accordance with this Schedule.
- 4.4 OpenNet shall at its sole discretion determine the serving CO and Building MDF Room from which the Residential End-User Connection will be provided.

***IDA Directed Modifications: IDA refers OpenNet to the directed modifications to clause 4 above. To assist the Requesting Licensees in determining their service provisioning requirements and to avoid any potential dispute in determining which CO and building MDF serve the Residential End-Users, IDA considers it fair, reasonable and necessary that OpenNet provides to the Requesting Licensees upfront information relating to the specific CO serving specific Residential End-Users.***

***Accordingly IDA directs OpenNet to include a provision that it will make such information available to Requesting Licensees in a manner that is easily accessible. At a minimum, such information should be made available to the Requesting Licensees on OpenNet's website during the interim period prior to the implementation of the OpenNet Platform.***

## **5. RESIDENTIAL END-USER CONNECTION REQUEST**

- 5.1 OpenNet shall process all Requests for Residential End-User Connection on a 'first come, first served' basis up to the maximum number specified in clause 5.2.
- 5.2 For each week, OpenNet shall process a combined total of no more than 2050 Requests for Basic Mandated Services and Layer 1 Redundancy Services (**Maximum Quota**) from all Requesting Licensees.
- 5.3 OpenNet shall process Requests beyond the Maximum Quota of an additional thirty percent (30%) above the Maximum Quota for all requests for Basic Mandated Services and Layer 1 Redundancy Services. The service activation period for such additional Requests shall be twice the service activation period of Requests which fall within the Maximum Quota. The additional Requests will be counted in the following week's Maximum Quota.
- 5.4 In the event that the Request exceeds the Maximum Quota, OpenNet shall inform the Requesting Licensee and the Request will be processed at twice the service activation period of Requests which fall within the Maximum Quota.

**IDA Directed Modifications:** *The industry has noted an anomaly in the current procedure in clauses 5.3 and 5.4. As an example, if a Requesting Licensee places an order on a Friday and the order happens to be beyond the Maximum Quota, but within the additional 30% capacity, OpenNet would contractually only need to activate this Requesting Licensee's service six (6) Business Days from the request date. However, if this request had simply been rolled over to Monday, the connection would have to be activated within three (3) Business Days.*

*At the same time, IDA considers it fair, reasonable and necessary that a request should not be rejected simply because it is beyond the weekly Maximum Quota. Otherwise, over and above the uncertainty in service provisioning, the Requesting Licensee will also have to incur costs in resubmitting its application.*

**Accordingly, IDA directs OpenNet to propose, for IDA's approval, a cost-effective and efficient mechanism in order to address the anomaly and requirements specified above; for example, a roll-over mechanism for its ordering and provisioning procedure.**

5.5 Within one (1) Business Day of the date on which OpenNet receives the request for Residential End-User Connection (**Request Date**), OpenNet must notify the Requesting Licensee whether its application is in principle accepted or rejected for any one of the following reasons:

**IDA Directed Modifications:** *One respondent suggested that when OpenNet notifies the Requesting Licensee of its acceptance of the Request, such notification should include a unique reference number. IDA considers that there is merit in this suggestion as it helps to simplify identification processes. Accordingly, IDA directs OpenNet to modify clause 5.5 to incorporate this requirement.*

- (a) the Request for Residential End-User Connection is not in the prescribed form;
- (b) the Request does not contain all the required information or the information provided is inaccurate or misleading;
- (c) the Request has exceeded the threshold of 30% above the Maximum Quota;

**IDA Directed Modifications:** *IDA refers OpenNet to the directed modifications at clause 5.4 above. IDA requires that OpenNet puts in place a procedure that allows all requests exceeding the Maximum Quota to be queued instead of being rejected.*

- (d) where the service activation date requested is less than three (3) Business Days from the date of receipt of a Request; or
- (e) where the Requesting Licensee has committed a material breach of the ICO Agreement or this Schedule.

5.6 If OpenNet has provided its in-principle acceptance to the Request for Residential End-User Connection, OpenNet will proceed with its provisioning and inform the Requesting Licensee within three (3) Business Days of the Request Date whether or not it is able to provide the Residential End-User Connection, taking into consideration the following:

- (a) whether the equipment or services that the Requesting Licensee proposes to use or to provide interfere with, or cause deterioration to services supplied by OpenNet;
- (b) obstruction from building owner, building management, home owner or End-User to OpenNet installation or installation schedule;
- (c) whether the Transmission Tie-Cable (installed pursuant to Co-location Service in Schedule 12) for connection to the Residential End-User Connection is operational at the point in time of OpenNet's provisioning of the Residential End-User Connection;

***IDA Directed Modifications: IDA notes a typographical error in the first line of clause 5.6(c). Accordingly, IDA directs OpenNet to remove the hyphen in the reference to "Transmission Tie-Cable".***

- (d) whether the Transmission Tie Cable Port to be connected at the Central Office in relation to the Request for Residential End-User Connection is already in use;
- (e) whether OpenNet has rolled out its Network to the Residential Building;
- (f) whether OpenNet needs to increase capacity to provide the Residential End-User Connection; and
- (g) security and confidentiality requirements or restrictions imposed on OpenNet by Government Agencies.



***IDA Directed Modifications: IDA agrees with industry feedback that the ordering and provisioning procedure as currently structured is cumbersome and can be improved upon.***

***Under clause 5.5, the Requesting Licensee must first obtain OpenNet's in-principle acceptance of the Request for Residential End-User Connection.***

***Thereafter, under clause 5.6, OpenNet will proceed with its provisioning and inform the Requesting Licensee within three (3) Business Days of the Request Date whether or not it is able to provide the Residential End-User Connection.***

***Lastly, under clause 5.8, OpenNet may reject the Request on the third Business Day if any of the conditions specified in clause 5.8(a) to (f) arises.***

***This process is cumbersome and confusing as it may potentially involve two rounds of review of the Requesting Licensee's Request by OpenNet after in-principle acceptance.***

***In this respect, IDA requires the process to be simplified and should result in the following outcomes: (a) an acceptance of the Requesting Licensee's application; (b) a rejection of the Requesting Licensee's application; or (c) a qualified acceptance of the Requesting Licensee's application (i.e. acceptance with notification that there will be delays in the delivery timeframe).***

***Having reviewed the considerations listed in clause 5.6, IDA is of the view that the situations referred to in clause 5.6(b), 5.6(c) and 5.6(f) should not warrant an outright rejection, since these issues may be rectified. Instead, IDA considers it reasonable for such Requests to be accepted on a qualified basis, subject to rectification of the underlying issues. For example, using clause 5.6(b) as an illustration, the Request should only be fully accepted once the relevant building owner, building management, home owner or End-User has granted its permission to carry out the installation work. Therefore, it is fair and reasonable that where any of the situations in clauses 5.6(b), 5.6(c) and 5.6(f) apply, it should produce a "qualified acceptance" outcome. For the avoidance of doubt, if OpenNet reverts with a qualified acceptance, OpenNet must also inform Requesting Licensees of a revised service activation period.***

***Accordingly, IDA directs OpenNet to propose for IDA's approval, modifications to clauses 5.6 and 5.8, to streamline the ordering and provisioning procedure as specified above.***

5.7 The Requesting Licensee shall pay OpenNet the applicable Installation Charge and Patching Charge specified in Schedule 15 (Charges) for provisioning the Residential End-User Connection.

5.8 OpenNet may reject a Request for Residential End-User Connection on the third Business Day if:

- (a) the equipment or services that the Requesting Licensee proposes to use or to provide may interfere with, or cause deterioration to services supplied by OpenNet;
- (b) the building owner, building management, home owner or End-User does not permit the performance of installation work;
- (c) the Transmission Tie-Cable (installed pursuant to Co-Location Service in Schedule 12 (Co-Location Service)) for connection to the Residential End-User Connection is not operational at the point in time of OpenNet's provisioning of the Residential End-User Connection;

***IDA Directed Modifications: IDA refers OpenNet to the directed modification at clause 5.6(c) above. Accordingly, IDA directs OpenNet to make a similar amendment to this clause 5.8(c).***

- (d) the Transmission Tie Cable Port to be connected at the Central Office in relation to the Request for Residential End-User Connection is already in use;
- (e) OpenNet has not rolled out its Network to the Residential Building; or
- (f) there are security and confidentiality requirements or restrictions imposed on OpenNet by Government Agencies.

5.9 Where OpenNet rejects any Request for Residential End-User Connection, OpenNet shall provide reasons explaining the basis for rejection.

## **6. DELIVERY**

6.1 Subject to clauses 5.8 and 6.2, OpenNet shall provide the Residential End-User Connection by the end of three (3) Business Days from the receipt of a valid Request from the Requesting Licensee, where OpenNet has deployed its Network to the Distribution Point, Final Distribution Point or First Termination Point of the

Residential Premise. Where the Residential End-User Connection is to be connected to a Transmission Tie Cable Port, OpenNet's obligation to provide the Residential End-User Connection under this clause 6.1 shall be conditional on the Transmission Tie Cable being installed and operational.

***IDA Directed Modifications: It is the responsibility of OpenNet to ensure that the Residential End-User Connection is connected to a Transmission Tie Cable Port, and hence delivery of the service should not be conditional upon the Transmission Tie Cable being installed and operational. Accordingly, IDA directs OpenNet to modify clause 6.1 to incorporate this requirement.***

6.2 Where there is insufficient capacity to provide the Residential End-User Connection, OpenNet shall provide the Residential End-User Connection:

- (a) within ten (10) Business Days if additional capacity is required to be installed between the FTTB Node of the Residential Premise and the First Termination Point of the Residential Premise; or
- (b) within forty (40) Business Days if additional capacity is required to be installed between the designated Central Office and the First Termination Point of the Residential Premise.

6.3 Where the home owner has previously refused OpenNet's entry to the premise, OpenNet will provide internal cabling within the Residential Premise using PVC trunking up to a maximum distance of 15 metres to the First Termination Point, measured from the point of entry to the Residential Premise to the First Termination Point. If the owner of a Residential Premise requests the installation of internal cabling that exceeds 15 metres and/or requires the use of deployment technique other than open ducting, OpenNet shall inform the Requesting Licensee. The Requesting Licensee shall pay the difference in charges and OpenNet shall inform the Requesting Licensee a revised implementation timeline which shall not be subject to the provisioning Service Level Guarantee.

***IDA Directed Modifications: It is unfair and unreasonable for OpenNet to impose an obligation on a Requesting Licensee to pay for all additional works requested by a home owner irrespective of whether the Requesting Licensee has agreed to pay for those additional works. In this respect, IDA requires OpenNet to propose a process by which the Requesting Licensee has an opportunity to agree to the additional charges that OpenNet may impose for internal cabling exceeding 15 metres and/or using other deployment technique other than open ducting. For example, this can be by way of a***

***pre-approval given by the Requesting Licensee to OpenNet or a case-by-case approval to be sought by OpenNet from the Requesting Licensee.***

***Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 6.3 to incorporate the requirements set out above. Notwithstanding, IDA clarifies that the billing arrangements for the additional works may be modified subsequently. In this regard, clause 6.3 is subject to further modifications to reflect the final billing arrangements adopted (if any).***

- 6.4 Unless otherwise stated, OpenNet shall retain the responsibility for working at OpenNet's FDF at the Central Office and Building MDF Room, FTTB Node and First Termination Point, including Patching Service at OpenNet's FDF at the Central Office, Building MDF Room and FTTB Node in accordance with Schedule 13 on Patching Services. The Requesting Licensee shall bear the Charges for such work carried out by OpenNet.
- 6.5 Where the Requesting Licensee requests Residential End-User Connection for the purpose of providing OE services to the End-User, OpenNet will provide the necessary Patching Service at OpenNet's FDF in the Building MDF Room using Patch Cable of not exceeding ten (10) metres in length. The Requesting Licensee shall provide its own Patch Cable if it requires a longer Patch Cable. For the avoidance of doubt, where the Requesting Licensee provides its own Patch Cable, OpenNet will not offer and Requesting Licensee shall not request for any rebate or discount over the Patching Service or the Residential End-User Connection.
- 6.6 OpenNet will use optical fibre cable based on the ITU-T G.652D standard for outdoor installations and the ITU-T G.657A standard for in-building installations (where applicable) to deliver the Residential End-User Connection.
- 6.7 OpenNet will test the optical fibre cable from OpenNet's FDF at its designated Central Office to the First Termination Point at the Residential Premise to ensure that the Residential End-User Connection falls within the specified optical performance. Testing will be conducted at wavelengths of 1310nm, 1490nm and 1550nm.

***IDA Directed Modifications: IDA refers OpenNet to its directed modifications to clause 3.4 above. IDA directs OpenNet to amend the reference to also include "Requesting Licensee's FDF at the Central Office designated by OpenNet".***

- 6.8 OpenNet shall ensure that the optical power loss:

- (a) of any Residential End-User Connection for the purpose of provision of GPON services does not exceed -28dB; and
- (b) of any Residential End-User Connection for the purpose of provision of OE services does not exceed -20 dB from OpenNet's FDF in the Central Office to OpenNet's FDF in the Building MDF Room, and does not exceed -20dB from OpenNet's FDF in the Building MDF Room to the First Termination Point of the Residential Premise.

**IDA Directed Modifications: IDA refers OpenNet to its directed modifications to clause 3.4 above. IDA directs OpenNet to amend the reference to also include "Requesting Licensee's FDF at the Central Office designated by OpenNet".**

6.9 OpenNet shall promptly notify the Requesting Licensee upon the completion of the Residential End-User Connection.

6.10 Subject to clause 6.11, in the event OpenNet fails to meet the applicable service activation period for a Request, OpenNet shall compensate the Requesting Licensee an amount equal to the number of days of delay multiplied by the weekly recurring charge for the Residential End-User Connection, subject to a maximum of 30 times the weekly recurring charge for the Residential End-User Connection (**Weekly Recurring Charge**), where:

$$\text{Weekly Recurring Charge} = \text{Monthly recurring charge} \times 7 / 30$$

6.11 OpenNet shall not be required to compensate the QP under any of the following circumstances:

- (a) Delay in the granting of permission from or permission is not granted by the building owners/management or house owner or End-User to install the required Network to the Residential Premise within the said building;
- (b) Where the owner of a Residential Premise requests the installation of internal cabling that requires more than 15 metres of ducting and/or requires the use of a deployment technique other than open ducting;
- (c) The Requesting Licensee has requested for a service activation date that is beyond the stipulated service activation period;

**IDA Directed Modifications: As there is no requested date for activation in the Request Form, IDA directs OpenNet to propose for IDA's approval, modifications to clause**

**6.11(c) to clarify how and where the Requesting Licensee should indicate its requested activation date if it is beyond the standard service activation period.**

- (d) The Requesting Licensee requests the deferment of the service activation date; or
- (e) The building which was initially under network coverage has been reconstructed and OpenNet has to reinstall its Network to the building.

**IDA Directed Modifications: IDA notes that there is a referencing error in clause 6.11, and directs OpenNet to amend the reference to “QP” in clause 6.11 to “Requesting Licensee” instead. For all the scenarios listed in clause 6.11 above, IDA expects that OpenNet must keep to the revised request service activation period, failing which the Service Level Guarantees will apply. IDA directs OpenNet to propose, for IDA’s approval, such modifications which are necessary to implement this intended outcome.**

## **7. RESPONSIBILITY AT DP AND OPENNET FDF**

- 7.1 The Requesting Licensee shall not, and shall ensure that its employees, agents and contractors do not, at any time access OpenNet’s FDF at the Central Office and Building MDF Room, the FTTB Node and the Distribution Point.
- 7.2 Where the Requesting Licensee wishes to change the existing patching connection at OpenNet’s FDF at the Central Office or Building MDF Room, the Requesting Licensee shall submit applications for termination of existing Patching Service and an order for new Patching Service at the Central Office or Building MDF Room in accordance with Schedule 13 (Patching Service).

## **8. DEACTIVATION**

- 8.1 Subject to the minimum contract term, the Requesting Licensee may terminate the Residential End-User Connection by giving OpenNet not less than one (1) month prior written notice.
- 8.2 If the Residential End-User Connection service is terminated before the expiry date of the minimum contract term, the Requesting Licensee must pay OpenNet one hundred percent (100%) of the monthly recurring charge for the remainder of the minimum contract term.

***IDA Directed Modifications: IDA refers OpenNet to the Explanatory Memorandum, in particular paragraph 40 therein. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to clause 8.2, to clarify that the Requesting Licensee will be liable to pay the Monthly Recurring Charge for the remainder of the minimum contract term, only where the Residential End-User Connection is terminated by the Requesting Licensee pursuant to clause 8.1.***

***Further, IDA directs OpenNet to replace "monthly recurring charge" with a reference to "Monthly Recurring Charge" since this is a term defined in Schedule 18 (Dictionary).***

8.3 Where any Patching Service is no longer required as a result of the termination of the Residential End-User Connection, OpenNet shall remove the Patching Service at all the relevant access points and the Requesting Licensee shall be liable for the termination charges in accordance with Schedule 15 (Charges).

***IDA Directed Modifications: IDA refers OpenNet to the Explanatory Memorandum, in particular paragraph 39 therein. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to clause 8.3, to provide that the Requesting Licensee will not be liable to pay any Charges for the removal of Patching Service related to or in connection with the termination of the Residential End-User Connection service, if such termination is the result of OpenNet's fault.***

## **9. STANDARD TERMS AND CONDITIONS**

9.1 OpenNet shall at its sole discretion determine its network deployment, including but not limited to the access points, fibre cable routing and location of the Central Office, Building MDF Room, FTTB Node, Distribution Point and First Termination Point from which the Residential End-User Connection is provided.

***IDA Directed Modifications: IDA refers OpenNet to the directed modifications to clause 4 above. To assist the Requesting Licensees in determining their service provisioning requirements and to avoid any potential dispute in determining which CO and Building MDF Room serve the Residential End-Users, IDA considers it fair, reasonable and necessary that OpenNet provides to the Requesting Licensees upfront information relating to the specific CO serving specific Residential End-Users.***

***Accordingly IDA directs OpenNet to include a provision that it will make such information available to Requesting Licensees in a manner that is easily accessible. At a minimum, such information should be made available to the Requesting Licensees on OpenNet's website during the interim period prior to the implementation of the OpenNet Platform.***

- 9.2 OpenNet shall be responsible for the maintenance of the Residential End-User Connection, excluding all Patching Services installed under this Schedule. The terms and conditions of Patching Services provided shall be pursuant to Schedule 13 (Patching Service).
- 9.3 Except to the extent strictly necessary to accurately describe the service to actual or potential Customers, the Requesting Licensee shall not use OpenNet's name, any OpenNet's trademarks or the fact that any service is supplied using OpenNet's Network in promoting the Requesting Licensee's service.
- 9.4 The Parties shall in good faith co-operate with each other and take reasonable measures to ensure that there is no interference with or deterioration to OpenNet's existing services or those of a Third Party as a result of the Requesting Licensee's use of the Residential End-User Connection.
- 9.5 If it is necessary to carry out any scheduled service interruption, including but not limited to planned repair, or replacement or upgrade to any equipment or facility forming part of the Residential End-User Connection, OpenNet shall provide the Requesting Licensee with at least three (3) weeks' written notice in advance of such interruptions, repairs or upgrades. OpenNet shall take reasonable measures to minimise any service disruption to the Requesting Licensee.

***IDA Directed Modifications: IDA considers it fair, reasonable and necessary that Requesting Licensees affected by scheduled service interruptions should be informed how long such interruptions will be. This is because Requesting Licensees will likely owe a similar obligation to their customers to notify them of any service interruption and its length. IDA also considers the period of at least three (3) weeks' notice may not be sufficient for the Requesting Licensees and their customers to plan for and to minimise the effects of the interruptions.***

***Accordingly, IDA directs OpenNet to modify clause 9.5 to provide that it will inform Requesting Licensees of the period of service interruption. In addition, OpenNet must also provide Requesting Licensees with no less than one (1) month's prior written notice of such interruptions so as to enable Requesting Licensees and their customers to plan ahead of such scheduled interruptions.***



- 9.6 If the scheduled service interruption affects 500 or more Residential End-User Connections, OpenNet will carry out the scheduled service interruption between midnight and 6am.

***IDA Directed Modifications: IDA understands from industry feedback that Residential End-Users' peak usage is expected to last beyond midnight. As such, to minimise any inconvenience to Residential End-Users, IDA directs OpenNet to modify clause 9.6 to provide that it will carry out all scheduled service interruptions between 1am – 6am. In addition, as all service interruptions would have an adverse impact on End-Users, the revised scheduled interruption period should be applicable regardless of the number of Residential End-User Connections that will be affected.***

- 9.7 Subject to Requesting Licensee acquiring redundancy service, OpenNet would, where possible, provide assistance to Requesting Licensee to divert its Residential End-User Connection to the redundancy service before commencing the scheduled service interruption.

***IDA Directed Modifications: Given that Requesting Licensees will purchase Redundancy Services from OpenNet, IDA considers it reasonable, justified and necessary for OpenNet to provide assistance to these Requesting Licensees in diverting the Residential End-User Connections to Redundancy Services, before OpenNet commences any scheduled service interruption. Accordingly, IDA directs OpenNet to modify this clause 9.7 to provide that prior to the commencement of the scheduled service interruption, OpenNet shall be required, where technically feasible, to provide the Requesting Licensees assistance in diverting the Residential End-User Connections to Redundancy Services.***

- 9.8 Where there are available resources, OpenNet will, where possible, first divert critical links to alternative routings before commencing the scheduled service interruption.

- 9.9 OpenNet shall not be liable for any loss caused by such scheduled service interruption.

***IDA Directed Modifications: IDA refers OpenNet to the directed modifications to clause 9.6 above. It is foreseeable that where scheduled service interruption is carried out outside of the stipulated period, Requesting Licensees may incur loss due to downtime in service to the Residential End-Users. In this respect, IDA considers that it is fair,***

***reasonable and appropriate for OpenNet to propose, for IDA's approval, modifications to provide for a suitable remedy in such circumstances.***

9.10 The Requesting Licensee shall be responsible to the Requesting Licensee's Customers for all aspects of the Requesting Licensee's services including but not limited to the operations and maintenance of the Requesting Licensee's service.

9.11 The Requesting Licensee must procure and maintain at its own cost:

- (a) any equipment or software needed to implement, receive or use the Residential End-User Connection (including but not limited to any configuration of the NTE at the Residential Premise);
- (b) co-location at the designated Central Office and Building MDF Room;
- (c) connection to RSPs and the Requesting Licensee's Customers; and

***IDA Directed Modifications: IDA notes that connections to RSPs and the Requesting Licensee's Customers are not within the scope of this Schedule 1 (Residential End-User Connection), and accordingly directs OpenNet to remove clause 9.11(c) in its entirety.***

- (d) access to the Residential Premise.

9.12 Nothing in this Schedule vests in the Requesting Licensee any right, title or proprietary interest in the optical fibre cable, equipment or facilities forming part of the Residential End-User Connection.

## **10. ACCESS AND APPROVALS REQUIRED**

10.1 The Parties shall comply with clause 15.5 of the main body of this ICO Agreement in relation to the obtaining of all licences, permits, consents, waivers, authorisations and intellectual property or other rights required for the provision of the Residential End-User Connection.

## **11. FAULT REPORTING AND CLEARING**

11.1 Each Party must have or establish a Fault Reporting and Control Centre (**FCC**) to act as a single point of contact for the reporting, management and clearing of faults. The FCC must be available twenty-four (24) hours a day, seven (7) days a week.

- 11.2 It is the Requesting Licensee's responsibility to determine the source of the fault at its own cost and to ensure that the fault does not lie within its own network before reporting the fault to OpenNet.
- 11.3 Upon receipt of a fault report from the Requesting Licensee under clause 11.1, OpenNet shall use reasonable endeavours to investigate the cause of the fault experienced by the Requesting Licensee.

***IDA Directed Modifications: As currently drafted, OpenNet is only required to use "reasonable endeavours" to investigate the cause of the fault experienced by the Requesting Licensee which does not lie within the latter's own network.***

***IDA considers that this threshold for discharging OpenNet's obligation is insufficient and instead, it is fair, reasonable and necessary to hold OpenNet to a higher standard in its assessment of Network faults. The NGNBN is meant to be a ubiquitous network. Faults in the Network can have serious consequences for Requesting Licensees and ultimately, End-Users. Therefore, IDA considers faults in the Network to be of grave concern, and OpenNet, as the exclusive Network provider, must be the entity with the obligation to correct such faults, to the best of its abilities. IDA also notes that the Requesting Licensee would have already fulfilled its duty to ensure that the fault does not lie within its own network, and IDA considers this is a duty that Requesting Licensees will take seriously because it could face "No Fault Found" Charges imposed by OpenNet for erroneous fault reporting. Hence, IDA considers that OpenNet, as the exclusive Network provider, must be required to discharge its fault identification and rectification obligations in a responsible and diligent manner.***

***Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 11.3, to provide that upon receipt of a fault report from the Requesting Licensee, OpenNet shall investigate the cause of the fault experienced by the Requesting Licensee in a diligent and responsible manner as would be expected of a competent service provider.***

***Further, IDA directs OpenNet to provide a process for keeping the Requesting Licensees informed of the progress and outcome of such investigation and/or verification conducted by OpenNet.***

***Lastly, IDA also notes there is a typographical error in the first line of clause 11.3, and directs OpenNet to replace "under clause 11.1" with the phrase "under clause 11.2".***

11.4 If, following investigation, OpenNet determines that the fault is at the Transmission Tie Cable at the Central Office, OpenNet will patch the Residential End-User Connection to another available Transmission Tie Cable Port and charge the Requesting Licensee a Patching Charge in accordance with Schedule 15 (Charges). OpenNet will not charge the Requesting Licensee a Patching Charge if OpenNet was solely responsible for the fault at the Transmission Tie Cable at the Central Office.

***IDA Directed Modifications: IDA refers OpenNet to its directed modification at clause 2.1 above. Accordingly, IDA directs OpenNet to modify clause 11.4 to make clear that OpenNet will also not charge the Requesting Licensee a Patching Charge if the fault at the Transmission Tie Cable at the Central Office is caused by any default by OpenNet's contractors and/or suppliers.***

11.5 If, following investigation, OpenNet determines that the fault is at the Patch Cable at the Building MDF Room, OpenNet will replace with another Patch Cable(s) and charge the Requesting Licensee a Patching Charge(s) in accordance with Schedule 15 (Charges). OpenNet will not charge the Requesting Licensee a Patching Charge if OpenNet was solely responsible for the fault at the Patch Cable at the Building MDF Room.

***IDA Directed Modifications: IDA refers OpenNet to its directed modification at clause 2.1 above. Accordingly, IDA directs OpenNet to modify clause 11.5 to make clear that OpenNet will also not charge the Requesting Licensee a Patching Charge if the fault at the Patch Cable at the Building MDF Room is caused by any default by OpenNet's contractors and/or suppliers.***

11.6 If, following investigation, OpenNet determines that no fault is found or the fault is not due to the OpenNet Network or equipment, then OpenNet shall charge the Requesting Licensee a No Fault Found Charge for the fault report in accordance with Schedule 15 (Charges).

11.7 If OpenNet is unable to identify any fault, OpenNet will call for a fault identification coordination meeting between OpenNet and the Requesting Licensee to identify the fault. The Requesting Licensee shall provide all reasonable assistance requested by OpenNet. Each Party is to bear its own cost for attending such fault identification coordination meeting as well as any testing or trouble-shooting activities required as a result of such a meeting.

- 11.8 The Residential End-User Connection is deemed to be restored when OpenNet has tested and confirmed to the Requesting Licensee that the Residential End-User Connection has been restored.
- 11.9 Where the Requesting Licensee has lodged with OpenNet a fault report and OpenNet is in the process of investigating the fault or where the Requesting Licensee has not lodged a fault report but suspect that there is a fault on the Residential End-User Connection, the Requesting Licensee may request OpenNet for a joint investigation. The Requesting Licensee shall propose the date, time and venue for the joint investigation. Subject to OpenNet's resource availability and agreement to the date, time and venue, OpenNet shall attend the joint investigation and charge the Requesting Licensee the Joint Investigation Charge according to Schedule 15 (Charges).
- 11.10 The Requesting Licensee acknowledges that OpenNet may temporarily disconnect the Requesting Licensee's Residential End-User Connection to perform reasonable fault analysis and line testing on the Residential End-User Connection.

***IDA Directed Modifications: IDA considers it fair, reasonable and necessary to require OpenNet to inform the Requesting Licensee in advance of any temporary disconnection to perform fault analysis and line testing on the Residential End-User Connection, as such temporary disconnection has an impact on, and results in a disruption to, the Residential End-User Connection.***

***Accordingly, IDA directs OpenNet to modify clause 11.10 such that: (a) it shall be required to provide notice to the Requesting Licensee before disconnecting the Requesting Licensee's Residential End-User Connection; and (b) any such disconnection by OpenNet under this clause 11.10 must be deemed necessary.***

- 11.11 Each Party shall maintain and store its own records of faults and repairs.

### **Mean Time To Recovery**

- 11.12 OpenNet shall restore any fault within a standard Mean Time To Recovery (MTTR) of eight (8) hours.
- 11.13 Subject to clause 2.6, the MTTR shall be the average time OpenNet took to restore service for all fault incidents for all Residential End-User Connections acquired under this Schedule during a month, measured from the time each fault

is reported by the Requesting Licensee to the time OpenNet confirms that the fault is restored, excluding fault incidents where OpenNet is prevented or restricted from restoring the service owing to matters that are not within OpenNet's control.

***IDA Directed Modifications: As currently drafted, it is unclear from this clause 11.13 whether the MTTR is based on fault incidents relating to Residential End-User Connections acquired by all Requesting Licensees, or only those acquired by the relevant Requesting Licensee.***

***For clarity, IDA directs OpenNet to modify this clause to provide that the MTTR shall be the average time taken for OpenNet to restore service for fault incidents for all connections acquired by the relevant Requesting Licensee under this Schedule during a month.***

11.14 In the event OpenNet fails to meet the standard MTTR for a particular month, OpenNet shall compensate the Requesting Licensee an MTTR Rebate equal to the difference between the MTTR experienced by the Requesting Licensee and the standard MTTR in terms of number of days, multiplied by the number of services affected, multiplied by the Weekly Recurring Charge for the Residential End-User Connection, subject to a maximum of 30 times the Weekly Recurring Charge for the Residential End-User Connection.

## **12. SERVICE LEVEL AVAILABILITY**

12.1 OpenNet shall offer a service level availability of 99.99% per month for the Residential End-User Connection. OpenNet shall offer to rebate the Requesting Licensee ten percent (10%) of the Monthly Recurring Charge if OpenNet fails to meet the service level availability for that month.

12.2 Service level availability for the Residential End-User Connection is calculated as follows:

$$\frac{(A - B)}{(A)} \times 100\%$$

Where A = 24 hours x number of days for the month (in hours); and

B = total network outage time for the Residential End-User Connection in the same month (in hours)

12.3 Subject to clause 2.6, the total network outage time is the sum of all minutes for which the Requesting Licensee Residential End-User Connection is unavailable, measured from the time each fault is reported by the Requesting Licensee to the time OpenNet confirms that the fault is restored, excluding fault incidents where OpenNet is prevented or restricted from restoring the service owing to matters that are not within OpenNet's control.

### **13. PROTECTION AND SAFETY**

13.1 Each Party is responsible for the safe operation of its Network and in particular the safe operation of any equipment within its Network on its side of the connection at the designated Central Office and the Residential Premise.

13.2 Each Party shall, so far as reasonably practicable, take all necessary steps to ensure that the licence of the Residential End-User Connection, its operations and its implementation of this Schedule:

- (a) do not endanger the safety or health of any person, including the employees and contractors of the Parties; and
- (b) do not damage, interfere with or cause any deterioration in the operation of the OpenNet Network.

### **14. TERM OF LICENCE**

14.1 The minimum contract term for a Residential End-User Connection shall be twelve (12) months starting from the service activation date of the Residential End-User Connection.

### **15. SUSPENSION**

15.1 Subject to clause 11.2 of the main body of this ICO Agreement, OpenNet may suspend the Requesting Licensee's licence to the Residential End-User Connection at any time until further notice to the Requesting Licensee if the Residential End-User Connection licence causes or is likely to cause physical or technical harm to any telecommunications network, system or services (whether of OpenNet or any other person) including but not limited to causing damage, interfering with or causing deterioration in the operation of the OpenNet Network.

***IDA Directed Modifications: IDA is of the view that the service provisioning and suspension process will become unduly cumbersome and tedious if its prior approval has to be sought for every instance of suspension of a licence for a Residential End-user Connection. Accordingly, IDA directs OpenNet to remove the phrase “Subject to clause 11.2 of the main body of this ICO Agreement” from this clause 15.1.***

15.2 Without limiting the exclusions or limitations of liability in this ICO Agreement, OpenNet shall not be liable to the Requesting Licensee for any Loss resulting from, or in connection with, suspension of a Residential End-User Connection licence under this clause 15.

## **16. TERMINATION OF LICENCE**

16.1 The Requesting Licensee shall keep OpenNet informed on the Requesting Licensee’s utilisation of each Residential End-User Connection six (6) months from the service activation date and when there are changes to the utilisation.

16.2 The Requesting Licensee must use or activate a service to a Retail Service Provider using the Residential End-User Connection within six (6) months from the service activation date of the Residential End-User Connection. If the Requesting Licensee fails to do so, OpenNet will deactivate the Residential End-User Connection upon giving the Requesting Licensee ten (10) Business Days prior notice. The Requesting Licensee must pay OpenNet the Monthly Recurring Charges for the remainder of the minimum contract term.

16.3 OpenNet may terminate the licence in respect of the Residential End-User Connection after giving the Requesting Licensee ten (10) Business Days prior written notice if: (1) the Requesting Licensee abandons its Residential End-User Connection; or (2) the Requesting Licensee is not providing any service over the Residential End-User Connection; and the Requesting Licensee did not dispute such written notice given by OpenNet.

16.4 Subject to clause 12.3 of the main body of this ICO Agreement, OpenNet may immediately terminate a licence of Residential End-User Connection under this Schedule if:

***IDA Directed Modifications: IDA is of the view that the service provisioning and termination process will become unduly cumbersome and tedious if its prior approval has to be sought for every instance of termination of a licence for Residential End-User Connection. Accordingly, IDA directs OpenNet to remove the phrase “Subject to clause 12.3 of the main body of this ICO Agreement” from this clause 16.4.***



- (a) the Requesting Licensee is no longer an FBO;
- (b) the OpenNet ICO is revoked by the Authority under clause 12.8 of the ICO Agreement;
- (c) the Authority removes the requirement for OpenNet to supply Residential End-User Connection under the OpenNet ICO or exempts OpenNet from supplying Residential End-User Connection under the ICO Agreement, provided that the date of termination shall not be earlier than the effective date of the Authority's decision;
- (d) in OpenNet's reasonable opinion, the Requesting Licensee is using the Residential End-User Connection in contravention of an applicable law, licence, code, regulation or direction and OpenNet has the necessary confirmation from the relevant Government Agencies that the Requesting Licensee is in contravention of the applicable law, licence, code, regulation or direction;
- (e) in OpenNet's reasonable opinion, the Requesting Licensee is using the Residential End-User Connection in a manner which places or allows a Third Party to act in contravention of an applicable law, licence, code, regulation or direction and OpenNet has the necessary confirmation from the relevant Government Agencies that the Third Party is in contravention of the applicable law, licence, code, regulation or direction;
- (f) the Residential End-User Connection is used other than the purposes specified in clause 1;
- (g) the licence in respect of Co-Location Space to which the Residential End-User Connection is connected has been terminated or has expired;
- (h) the Residential End-User Connection has become unsafe for its purpose;
- (i) OpenNet's right to own, maintain or operate the Residential End-User Connection has been revoked or terminated, or has expired; or
- (j) the use of the Residential End-User Connection causes or is likely to cause physical or technical harm to any telecommunications network, system or services (whether of OpenNet or any other person) including but not limited to causing damage, interfering with or causing deterioration in the operation of OpenNet's Network.

***IDA Directed Modifications: Unless OpenNet can provide IDA with a satisfactory justification for retaining clause 16.4(j) above, IDA requires clause 16.4(j) to be deleted. This is because IDA considers the remedy of suspension in clause 15.1 of this Schedule to be adequate and more appropriate, as any termination of a Residential End-User Connection licence will likely result in material adverse impact on the Requesting Licensee's operations. Instead, OpenNet should suspend the Residential End-User Connection licence until such reasonable time when the Party who has caused the physical or technical harm has resolved the harm. In this regard, IDA considers a period of sixty (60) Calendar Days to be a reasonable period for resolving the harm resulting in the suspension. Failing such resolution within the permitted period, either Party can terminate the Residential End-User Connection. Accordingly, IDA directs OpenNet to propose for IDA's approval, modifications to clauses 16.4 and 16.5, to provide a process incorporating the above requirements.***

16.5 Subject to clause 12.3 of the ICO Agreement, either Party (**Terminating Party**) may terminate the Residential End-User Connection:

***IDA Directed Modifications: IDA refers to its directed modification at clause 16.4 and accordingly requires OpenNet to remove the phrase "Subject to clause 12.3 of the ICO Agreement".***

- (a) if the other Party is in breach of this Schedule other than failure to pay any sum for which the Requesting Licensee has been invoiced, and such breach remains un-remedied for a period of sixty (60) Calendar Days after receiving notice from the Terminating Party; or
- (b) if the Requesting Licensee is in breach of this Schedule by its failure to pay any sum for which the Requesting Licensee has been invoiced, and such breach remains un-remedied for a period of fourteen (14) Calendar Days after receiving notice from the Terminating Party. For the avoidance of doubt, this sub-clause shall not apply pending the resolution of any Billing Dispute in accordance with the provisions of Schedule 16 (Billing).

16.6 Upon expiry or termination of the licence of Residential End-User Connection:

- (a) the Requesting Licensee must immediately discontinue the use of the Residential End-User Connection; and

- (b) the Requesting Licensee must immediately disconnect all equipment connected to the Residential End-User Connection; and

***IDA Directed Modifications: IDA is of the view that it is unrealistic and impractical to expect the Requesting Licensee to be able to remove equipment “immediately” upon expiry or termination of the licence. Hence, IDA considers a more reasonable position is to require the Requesting Licensee to remove its equipment “without undue delay”. Accordingly, IDA directs OpenNet to modify clause 16.6(b) to incorporate the requirements set out above.***

- (c) OpenNet shall be responsible for removing all necessary Patching Services at the Requesting Licensee’s cost in accordance with Schedule 15 (Charges).

***IDA Directed Modifications: IDA refers OpenNet to the Explanatory Memorandum, in particular paragraph 39 therein. Accordingly, IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to clause 16.6(c), to provide that the Requesting Licensee will not be liable to pay any Charges for the removal of Patching Services related to or in connection with the termination of the Residential End-User Connection, if such termination is the result of OpenNet’s fault.***

***Where, for example, termination has occurred because OpenNet’s right to operate the Residential End-User Connection has been revoked due to its own default, it would be unfair to require the Requesting Licensee to be liable for OpenNet’s costs of removing all Patching Services. Therefore, IDA is of the view that it is justified and reasonable to modify clause 16.6(c) as aforementioned.***

16.7 Upon termination of the licence of a Residential End-User Connection, the Requesting Licensee shall be liable to OpenNet for the Monthly Recurring Charges for the remainder of the minimum contract term.

***IDA Directed Modifications: IDA refers OpenNet to the Explanatory Memorandum, in particular paragraph 40 therein. Accordingly, IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to clause 16.7, to reflect that the Requesting Licensee will not be liable to pay the Monthly Recurring Charges for the remainder of the minimum contract term, unless such termination is the result of the Requesting Licensee’s fault.***

***IDA considers this position to be reasonable because it is unfair to expect the Requesting Licensee to continue to pay Monthly Recurring Charges when its Residential End-User Connection licence has been terminated, through no fault of its own. In light of the above, IDA is of the view that it is justified and reasonable to require OpenNet to modify clause 16.7 as directed above.***

16.8 If the Requesting Licensee fails to disconnect its equipment from the Residential End-User Connection under clause 16.6(b), OpenNet may at its sole discretion remove and/or dispose of the Requesting Licensee's equipment. The Requesting Licensee shall pay to OpenNet all reasonable costs associated with the work undertaken by OpenNet including the cost of disposing the Requesting Licensee's equipment. The Requesting Licensee shall have no claim whatsoever against OpenNet in connection with the removal and/or disposal of the Requesting Licensee's equipment from the Residential End-User Connection.

## **17. REDUNDANCY SERVICE**

***IDA Directed Modifications: For purposes of clarity, IDA directs OpenNet to propose for IDA's approval, modifications to clause 17 to state which application form should be used to request for Redundancy Service for Residential End-User Connection.***

17.1 The Requesting Licensee may acquire:

- (a) for a Residential End-User Connection of 1:24 Split Ratio for the purpose of providing GPON services, one separate fibre strand from OpenNet's splitter at the Building MDF Room to the First Termination Point of the Residential Premise;
- (b) for a Residential End-User Connection of 1:24 Split Ratio for the purpose of providing OE services, one separate fibre strand from OpenNet's FDF at the Building MDF Room to the First Termination Point of the Residential Premise; or
- (c) for a Residential End-User Connection of 1:1 Split Ratio for the purpose of providing either GPON services or OE services, one separate fibre strand from OpenNet's FDF at the CO to the First Termination Point of the Residential Premise

**(Redundancy Service)** at the same prices, terms and conditions as the Residential End-User Connection, unless stipulated otherwise in this clause 17.

- 17.2 OpenNet shall provide the Redundancy Service via the same duct and along the same path as the existing Residential End-User Connection, without Duct Diversity and without Path Diversity. OpenNet may provide the Redundancy Service using a separate fibre strand from the same fibre cable that carries the existing Residential End-User Connection.
- 17.3 The Requesting Licensee is eligible to acquire a Redundancy Service for the Residential End-User Connection provided that the Requesting Licensee has already acquired an equivalent Residential End-User Connection to the same Residential Premise.
- 17.4 The Requesting Licensee shall be responsible, at its own cost and equipment, for the implementation of diversity or redundancy for its services using the Redundancy Service provided by OpenNet.
- 17.5 The supply of the Redundancy Service is subject to the availability of OpenNet's resources.

***IDA Directed Modifications: The industry has commented, and IDA agrees, that the provision of Redundancy Service is essential, and IDA refers OpenNet to the Explanatory Memorandum regarding its provision of Redundancy Service, in particular paragraphs 59 to 61 therein. Accordingly, IDA directs OpenNet to amend clause 17.5, to clarify that OpenNet should not refuse to provide Redundancy Services to a Requesting Licensee, except in the very limited situation where OpenNet finds itself unable to build the requisite infrastructure to provide the necessary Redundancy Service (e.g. there is no space to build the requisite ducts).***

**ANNEX 1A: REQUEST FORM FOR RESIDENTIAL END-USER CONNECTION**

Request for Residential End-User Connection

Date of Application: \_\_\_\_\_ Application Reference Number: \

Requesting Licensee

Residential End-User Name: \_\_\_\_\_ Residential End-User Telephone Number: \_\_\_\_\_

Residential End-User Address: \_\_\_\_\_

Split Ratio: \_\_\_\_\_ 1:1 / 1:24 Assigned Transmission Tie Cable Port (Where applicable): \_\_\_\_\_

Technology: \_\_\_\_\_ GPON / OE \_\_\_\_\_

Any other info: \_\_\_\_\_

For and on Behalf of Requesting Licensee

Requesting Licensee

Sign: \_\_\_\_\_ Company Stamp: \_\_\_\_\_

Name: \_\_\_\_\_ Company Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Contact Number, Fax and email address \_\_\_\_\_

Part 1: Date: \_\_\_\_\_

Application accepted in principle: \_\_\_\_\_

Circuit Identification Number: \_\_\_\_\_

Tentative Provision Date : \_\_\_\_\_ Provide internal cabling to First Termination Point (Y/N)

OpenNet

Application rejected

Reason for rejection: \_\_\_\_\_

OpenNet Name / Signature: \_\_\_\_\_ Queue Status: \_\_\_\_\_

Part 2: Date: \_\_\_\_\_

Circuit Provision: \_\_\_\_\_

Revised Provision Date (where applicable): \_\_\_\_\_

Reason: \_\_\_\_\_ Insufficient Capacity (Y/N)

Any other reason: \_\_\_\_\_

OpenNet

Application rejected

Reason for rejection: \_\_\_\_\_

OpenNet Name / Signature: \_\_\_\_\_