APPENDIX 4

REQUIRED MODIFICATIONS TO SCHEDULE 3

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NBAP Connection

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SCHEDULE 3

NBAP CONNECTION

SCHEDULE 3 – MODIFICATION REQUIRED

IDA Directed Modifications: IDA refers OpenNet to section 10 of the Explanatory Memorandum to this Direction. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to Schedule 3 in the manner specified therein.

IDA refers to section 12 of the Explanatory Memorandum to this Direction, in relation to the Missed Appointments Charges proposed by OpenNet. IDA notes that this Schedule 3 contains references to "Missed Appointment Charge". Without limitation to section 12 of the Explanatory Memorandum, OpenNet should remove the references to "Missed Appointment Charge" in this Schedule 3 and propose modifications where necessary to meet the requirements set out in section 12 of the Explanatory Memorandum.

Comments were received that OpenNet should specify a provision to the clause 3.1 to allow Requesting Licensees to self-provide the NBAP First Termination Point by accessing the NBAP Connection at OpenNet's FDF at the Building MDF Room. In such cases, the Requesting Licensees will be responsible for the installation of fibre from the Building MDF Room to the NBAP First Termination Point, and any additional cost imposed by OpenNet for such access should be absolute and standard rated.

After careful consideration, IDA is of the view that there is merit in the suggestion above as it provides for additional flexibility. IDA considers that OpenNet should propose an option to allow Requesting Licensees to self-provide the NBAP First Termination Point by accessing the NBAP Connection at OpenNet's FTTB Node and/or Building MDF Room. IDA considers that under OpenNet's proposed option, the Requesting Licensee will be responsible for the installation of the fibre from the FTTB Node and Building MDF Room to the NBAP Termination Point, including securing the necessary access rights and approval. Further, OpenNet may propose the necessary price, terms and conditions for granting Requesting Licensees such an option. Unless OpenNet can

justify otherwise, the SAP and price for this option is not expected to be different from the SAP as well as existing charges relating to the NBAP Connection, less the digging and trenching costs.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to Schedule 3 to incorporate IDA's requirements above.

1. **SCOPE**

   This Schedule 3 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 Non-Building Address Point Termination Point (**NBAP TP**) for the purpose of the Requesting Licensee providing GPON services; or

   (ii) Layer 1 Service from OpenNet's designated CO to the NBAP TP for the purpose of the Requesting Licensee providing OE services

   (**NBAP Connection**).

1.1 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 NBAP 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, its contractors and/or suppliers, OpenNet will provide a remedy in the form of a rebate to the Requesting Licensee in accordance with:

   (i) clause 6.8 and any terms and conditions contained in this Schedule in respect of request and provisioning timeframes;

   (ii) clause 11.13 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.

CLAUSE 2.2 – MODIFICATION REQUIRED

2.2   A claim by the Requesting Licensee shall be made in writing within thirty (30) 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: Comments were received from industry respondents that OpenNet should process all claims within a-30 day period, following which any claims that remain unresolved should be automatically deemed to be approved.

IDA considers that it is reasonable for the industry to expect OpenNet to process claims in a timely manner. However, IDA also recognises that OpenNet may face difficulties in complying with a 30-day timeframe, as there are a number of Requesting Licensees who may submit claims to OpenNet at any time. In consideration of the above, IDA is prepared to allow OpenNet to propose a timeframe to process the submitted claim. OpenNet is required to provide satisfactory justification to IDA as to the reasonableness of the timeframe.

IDA is also of the view that in the interest of clarity, OpenNet should clarify whether the rebate will be credited into Requesting Licensee's account in the bill immediately after OpenNet had processed the claim.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 2.2 to address the above.

2.3   If the Requesting Licensee is entitled to a rebate pursuant to the claim made hereunder, then 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:

(a) the NBAP Connection is disconnected and/or reconnected by reason of it being suspended under the terms and conditions of this Schedule or ICO Agreement, except where the suspension is due to OpenNet's fault;

(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 NBAP Connection where any site-coordination meeting, Joint Investigation Meeting or fault identification coordination meeting is involved, except where (a) the fault was caused by OpenNet; and (b) the Requesting Licensee has not contributed to any delay in setting up the meeting. Notwithstanding the above, in determining whether the Service Level Guarantees have been met by OpenNet, the time taken from the start of arranging any site-coordination meeting, Joint Investigation Meeting or fault identification coordination meeting up to the end of the meeting, shall always be excluded;

CLAUSE 2.6(d) – MODIFICATION REQUIRED

(d) where OpenNet needs to obtain or maintain any licence or permission necessary to the provision or restoration of the NBAP Connection. Notwithstanding the above, in determining whether the Service Level Guarantees have been met by OpenNet, the time taken by OpenNet to obtain or maintain any licence or permission necessary to the provision or restoration of the NBAP Connection shall always be excluded;

IDA Directed Modifications: Comments were received that clause 2.6(d) should be subject to two requirements: (a) OpenNet must have used its best endeavours to obtain any licence or permission expeditiously; and (b) OpenNet must provide Requesting Licensees with evidence of such licence/permission, the steps taken to obtain it expeditiously and why OpenNet cannot obtain the licence/permission.

After careful consideration, IDA agrees that OpenNet should be required to use its best endeavours to obtain expeditiously the necessary licences or permission mentioned in clause 2.6(d). However, IDA is of the view that it is not necessary to require OpenNet to furnish evidence of this in every case. Instead, it would be more efficient if OpenNet were required to furnish evidence only in the event that a challenge or dispute is raised by Requesting Licensees as to whether OpenNet has used its best endeavours in the manner described above.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 2.6(d) to incorporate the above requirements.

CLAUSE 2.6(e) – MODIFICATION REQUIRED

(e)   OpenNet has difficulty accessing the NBAP TP location;

IDA Directed Modifications: Comments were received that clause 2.6(e) should be subject to two requirements: (a) OpenNet must use its best endeavours to remedy any access difficulty expeditiously, and (b) OpenNet must provide Requesting Licensees with evidence of such difficulty, the steps taken to remedy it expeditiously and why OpenNet cannot remedy the difficulty.

After careful consideration, IDA agrees that OpenNet should be required to use its best endeavours to remedy expeditiously the access difficulties. However, IDA is of the view that it is not necessary to require OpenNet to furnish evidence of this in every case. Instead, it would be more efficient if OpenNet were required to furnish evidence only in the event that a challenge or dispute is raised by Requesting Licensees as to whether OpenNet has used its best endeavours to expeditiously remedy the building access difficulties.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 2.6(e) to incorporate the above requirements.

CLAUSE 2.6(f) – MODIFICATION REQUIRED

(f) delay in the provision or restoration of the NBAP Connection caused by events beyond OpenNet's reasonable control;

IDA Directed Modifications: Comments were received that clause 2.6(f) should be amended to state that OpenNet must be responsible for the acts and omissions of its suppliers and contractors. IDA notes that OpenNet is already liable in the case where the delay is caused by the acts or omission of OpenNet's suppliers and contractors. This is because it would be open to OpenNet to take appropriate measures against its suppliers and contractors. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 2.6(f) to clarify that nothing shall preclude OpenNet from being responsible for the acts and omissions of its contractors and suppliers.

(g) OpenNet network outages for which the Requesting Licensee has not reported a fault;

(h) fault is reported by the Requesting Licensee but no fault is found or confirmed after due and careful investigation, and verification by OpenNet;

(i) OpenNet is required to carry out scheduled service interruption and the Requesting Licensee has been informed in accordance with clause 9.5; or

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

CLAUSE 2.6(k) – MODIFICATION REQUIRED

(k) any NBAP Connection with a contract term of 1 month.

IDA Directed Modifications: Comments were received that there is no valid reason to exclude those connections with a one-month contract term from the Service Level Guarantees, which are intended to cover such matters as fault restoration. The inclusion of clause 2.6(k) effectively means that there is no obligation on OpenNet to restore faults

on connections with one-month contract terms, and undermine the take-up of such connections, given that there would not be certainty as regards the reliability of the service. IDA considers that there is no good reason why appropriate Service Level Guarantees should be excluded for short term connections and agrees that it would undermine the take-up of such services. Accordingly, IDA directs OpenNet to delete clause 2.6(k) and propose, for IDA's approval, modifications to set out appropriate Service Level Guarantees for connections with a one-month contract term in Schedule 3 of the ICO.

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 the NBAP 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 NBAP Connection for the purpose of providing GPON services, OpenNet will provide a licence for NBAP Connection of 1:16 Split Ratio to the Requesting Licensee with the following:

(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 sixteen (16) NBAP TPs (or portion thereof);

(b)   one (1) dedicated fibre strand from the splitter to the NBAP TP;

CLAUSE 3.1(A)(c) – MODIFICATION REQUIRED

(c)   one (1) Patching Service at OpenNet's FDF at the Building MDF Room and the Requesting Licensee shall pay a Patching Charge in accordance with Schedule 15 (Charges); and

IDA Directed Modifications: IDA refers OpenNet to section 2 of the Explanatory Memorandum to this Direction. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 3.1(A)(c) in the manner specified therein.

(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).

CLAUSE 3.1(A) – MODIFICATION REQUIRED

Unless reasonably considered necessary by OpenNet, OpenNet shall utilise at least 90% of the connections in each splitter before an additional splitter is provisioned.

IDA Directed Modifications: Comments were received that OpenNet should spell out the situations in which it will provision an additional splitter. To avoid dispute, in the interest of clarity and to ensure an efficient implementation of the ICO, IDA agrees that it would be reasonable to require OpenNet to do so. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 3.1(A) to clarify the conditions that would have to be fulfilled before OpenNet will consider it reasonably necessary to provision an additional splitter even though it has not utilised at least 90% of the existing splitter.

(B) Where the Requesting Licensee requests for NBAP Connection for the purpose of providing OE services, OpenNet will provide a licence for a NBAP Connection of 1:16 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 sixteen (16) NBAP TPs (or portion thereof);

(b)   one (1) dedicated fibre strand from OpenNet's FDF at the Building MDF Room to the NBAP TP;

(c)   where necessary, 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   (A) Where the Requesting Licensee requests for a NBAP Connection for the purpose of providing GPON services, the Requesting Licensee shall access the NBAP Connection at OpenNet's FDF at the Central Office designated by OpenNet or the Requesting Licensee's FDF at the Central Office designated by OpenNet and at the NBAP TP.

3.2   (B) Where the Requesting Licensee requests for a NBAP Connection for the purpose of providing OE services, the Requesting Licensee shall access the NBAP Connection at OpenNet's FDF at the Central Office designated by OpenNet or the Requesting Licensee's FDF at the Central Office designated by OpenNet, at OpenNet's FDF at the Building MDF Room and at the NBAP TP.

3.3   Where the Requesting Licensee wishes to acquire subsequent fibre connection from CO to Building MDF Room, the Requesting Licensee shall acquire such fibre connection pursuant to Schedule 5 (CO to Building MDF Room Connection).

3.4   Where the Requesting Licensee acquires a NBAP Connection for the purpose of providing OE services, the Requesting Licensee shall ensure the NBAP Connection is connected to active Optical Ethernet equipment.

4.   ORDERING AND PROVISIONING PROCEDURE

CLAUSE 4.1 – MODIFICATION REQUIRED

4.1   The Requesting Licensee shall, prior to submitting its request for NBAP Connection, confirm that the requested location is a NBAP (and not a Non-Residential Premise). The Requesting Licensee shall first refer to the classification guidelines which are published on the Service Portal before submitting its clarification request to OpenNet.

IDA Directed Modifications: For clarity, IDA considers that the term "Service Portal" should be defined and set out in Schedule 18 of the ICO.

IDA is of the view that Requesting Licensee should only need to confirm that the requested location is a NBAP (and not a Non-Residential Premise) only if it is in doubt and not for every request. In this regard, OpenNet should amend its clause to reflect the above.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to the ICO to incorporate IDA's requirements.

CLAUSE 4.2 – MODIFICATION REQUIRED

4.2   The Requesting Licensee may submit its clarification request to OpenNet by email to nbapenquiry@opennet.com.sg if it is not able to ascertain the classification of a particular location. The Requesting Licensee shall submit photographs of the location and termination point's proposed location together with its clarification request. OpenNet will respond to the Requesting Licensee within two (2) Business Days of receipt of such request.

IDA Directed Modifications: Comments were received that OpenNet has essentially established itself as the party that defines property classifications. One industry respondent commented that OpenNet tends to take a long time in its consideration of such cases, and tends to classify properties such that it results in the highest charges. Therefore, it would be inappropriate for OpenNet to act as arbiter of property classifications. Rather, IDA would be more suitable for this role.

One of IDA's guiding principles is to ensure as efficient a process as possible for both OpenNet and the industry in the implementation of the ICO. In this respect, as the notification of classification of properties is an operational matter, IDA considers that it would be more efficient for OpenNet to perform this task. Should there be any disagreement, the parties have the ability to raise the matter to IDA for resolution. In this regard, OpenNet is not the final arbiter of property classification. In IDA's opinion, such a resolution process should be similar to the resolution process under the ICO but with a shorter timeframe as the item under dispute is not complex.

Comments were also received that OpenNet's obligation under clause 4.2 is limited to responding to the Requesting Licensee within 2 Business Days. Such a response could be simply an acknowledgement of the Requesting Licensee's Request, and as such there are no assurances that OpenNet will address such cases in a timely and responsive manner.

IDA agrees that it would be beneficial to require OpenNet to provide the classification of a particular location to the Requesting Licensee within 2 Business Days from date of receipt of such query.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 4.2 and other clauses in the ICO to: (a) propose a process which should be similar to the resolution process under the ICO but with a shorter timeframe to resolve dispute over classification between Non-Residential Premise and NBAP; and (b) clarify that OpenNet would provide the classification of a particular location to the Requesting Licensee within 2 Business Days from date of receipt of such query.

CLAUSE 4.3 – MODIFICATION REQUIRED

4.3 The Requesting Licensee shall submit its request for a NBAP Connection (**Request**) to OpenNet on a Business Day in the form of Annex 3A stating, but not limited to the following information:

(a) the Customer's name and telephone number for the NBAP Connection;

(b) the NBAP TP address and a map demonstrating the location of the NBAP TP;

CLAUSE 4.3(c) – MODIFICATION REQUIRED

(c) the Global Positioning System (GPS) coordinates, height (in metres, relative to ground level), and a broad description of the NBAP TP location; and

IDA Directed Modifications: IDA notes that there is a typographical error in clause 4.3(c). The word "and" at the end of line 2 of clause 4.3(c) should be deleted. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 4.3(c) to correct the typographical error.

CLAUSE 4.3(d) – MODIFICATION REQUIRED

(d) whether the request is for the purpose of providing GPON or OE services.

IDA Directed Modifications: IDA notes that there is a typographical error in clause 4.3(d). The "." after the phrase "OE services" should be

replaced by "; and" Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 4.3(d) to correct the typographical error.

      (e)   the term of the licence required, either one (1) month or twelve (12) months.

IDA Directed Modification: IDA refers OpenNet to section 10 of the Explanatory Memorandum to this Direction. Without limitation to the requirements therein, OpenNet should update its ICO to reflect that it has launched its Platform and commenced B2B transactions, and orders are processed through such means.

In addition, IDA requires OpenNet to clarify that it would allow Requesting Licensees to update the contact details of customers that have been submitted in the Request.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 4.3 to comply with the above requirements.

4.4   Relocation of the NBAP Connection is not allowed. In the event that the NBAP TP has relocated, the Requesting Licensee shall submit a request for termination of the existing NBAP Connection and request for a new NBAP Connection at the new NBAP TP location in accordance with this Schedule.

4.5   For the avoidance of doubt, change of use from GPON to OE or from OE to GPON is allowed subject to the Requesting Licensee paying the applicable charges for Patching Service in accordance to Schedule 15 (Charges)

CLAUSE 4.6 – MODIFICATION REQUIRED

4.6   OpenNet shall at its sole discretion determine the serving CO and Building MDF Room which the NBAP Connection will be provided from.

IDA Directed Modifications: Comments were received that OpenNet should provide the Mandated Services information for the serving CO and Building MDF Room. After careful consideration, IDA agrees with the above suggestions. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to this Schedule to provide for a process for Requesting Licensees to request for the above information.

As such information will be necessary for OE deployment, IDA's position is that such information should be readily made available and at no cost.

CLAUSE 4.7 – MODIFICATION REQUIRED

4.7 Initially, information relating to the Mandated Services will be available on OpenNet's website, for access by the Requesting Licensee through secured means. The secured access to OpenNet's website will require the payment of a Per User Account Charge (specified in clause 14 of Schedule 15 (Charges)) for each user account created. Initially, information relating to network outages will be sent to the Requesting Licensee via email. The information relating to the Mandated Services and the information relating to network outages shall be made available on the OpenNet Platform in due course. For the avoidance of doubt, such Per User Account Charge shall not be re-imposed when the information relating to Mandated Services is made available on the OpenNet Platform.

IDA Directed Modifications: Comments were received that while this clause 4.7 provides that network outage information will be made available on OpenNet's website and Platform, there are no details on the types of information provided. The respondent highlighted that network outage information is critical for Requesting Licensees to monitor and manage their services and networks, and suggested that OpenNet make the following types of information available:

> *(a)   start time of the outage;*

> *(b)   length of time for which outage is expected to continue;*

> *(c)   services affected by the outage;*

> *(d)   steps taken to remedy the outage; and*

> *(e)   steps (if any) Requesting Licensee may be required to take to assist with rectification of outage.*

After careful consideration, IDA agrees that it would be reasonable to require OpenNet to provide, at a minimum, the information enumerated above to Requesting Licensees in relation to network outages. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to incorporate the above requirement.

IDA also refers OpenNet to section 10 of the Explanatory Memorandum to this Direction. IDA directs OpenNet to propose, for IDA's approval, modifications to clause 4.7 as specified therein. Without limitation to the foregoing, OpenNet should update clause 4.7 to reflect that OpenNet has launched its Platform, commenced B2B transactions and that orders are processed through such means. OpenNet should also reflect that Mandated Services information shall be provided over the Platform and via B2B transactions.

5.   **NBAP CONNECTION REQUEST**

5.1   OpenNet shall process all Requests for NBAP Connection on a 'first come, first served' basis.

CLAUSE 5.2 – MODIFICATION REQUIRED

5.2   For each Business Day, OpenNet shall process a combined total of no more than 480 Requests for Basic Mandated Services and Layer 1 Redundancy Services (**Maximum Quota**) from all Requesting Licensees, and in any single week, OpenNet will not process more than 2,400 Requests for Basic Mandated Services and Layer 1 Redundancy Services from all Requesting Licensees. For avoidance of doubt, Requesting Licensee is able to select such dates made available from the OpenNet Platform and for which the Request is to be fulfilled except such Business Day where the Maximum Quota has been reached. OpenNet will process all Requests on a 'first come, first served' basis.

IDA Directed Modifications: IDA refers OpenNet to section 1 of the Explanatory Memorandum to this Direction. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 5.2 in the manner specified therein.

CLAUSES 5.3(a) – (b) – MODIFICATION REQUIRED

5.3   Within one(1) Business Day of the date on which OpenNet receives the request for NBAP Connection (Request Date) and subject to clause 5.2, OpenNet will notify the Requesting Licensee (and shall provide the Requesting Licensee with a unique reference number or a similar form of identification in the notification) if its Request is rejected for any one of the following reasons:

(a)   the Request for NBAP 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; and

IDA Directed Modifications: Comments were received that clauses 5.3(a)-(b) should not apply in the case of B2B orders. Instead, the "errors" described in these clauses should be checked in real-time and feedback provided immediately so that corrections can be made on the spot.

After careful consideration, IDA agrees that doing so would result in a more efficient service provisioning. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clauses 5.3(a)-(b) to give effect to the above.

IDA further refers OpenNet to section 10 of the Explanatory Memorandum to this Direction. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to give effect to the directed modifications set out therein. Without limitation to the foregoing, OpenNet should update clauses 5.3(a)-(b) to reflect that OpenNet has launched its Platform, commenced B2B transactions and that orders are processed through such means.

(c)   the Requesting Licensee has committed a material breach of the ICO Agreement or this Schedule.

5.4   Within twenty (20) Business Days of the Request Date and subject to clause 5.2, OpenNet will complete its Project Study (not applicable for clauses 5.4(a)) and notify the Requesting Licensee (and shall provide the Requesting Licensee with a unique reference number or a similar form of identification in the notification) whether its Request is accepted (and if accepted, the service activation period), or if rejected, for any one of the following reasons:

(a)   the NBAP TP location is deemed to be inaccessible;

(b)   the equipment or services that the Requesting Licensee proposes to use or to provide interfere with, or cause deterioration to services supplied by OpenNet;

CLAUSE 5.4(c) – MODIFICATION REQUIRED

(c)   there is obstruction from building owner, building management, home owner, End-User, property owner or relevant authorities to OpenNet installation or installation schedule including any breach by building owner, building management, home owner or End-User of applicable regulatory requirements including for example COPIF;

IDA Directed Modifications: IDA received a number of comments on this clause:

(a)   An industry respondent commented that it should be for IDA to decide if there is any obstruction or regulatory breach, and that by its proposed amendments, OpenNet is effectively arrogating to itself the power to make a regulatory determination, which cannot be allowed.

(b)   Another industry respondent observed that OpenNet's proposed amendments potentially widens OpenNet's ability to delay notifying Requesting Licensees of the order status. This delay will translate into greater uncertainty and prolonged waiting times for customers. The respondent therefore submitted that it is necessary for this clause to be amended so that:

(i)   OpenNet must demonstrate that it has exhausted its efforts in attempting to resolve the obstruction with the building owner / building management / customer before rejecting a request; and

(ii)   IDA and not OpenNet should determine whether the building management or customer has breached any regulatory requirements, and should therefore be denied service.

IDA has considered the comments carefully.

In respect of (a), IDA considers that OpenNet's proposed amendments should be removed as any breaches of regulatory requirements should be left to IDA to enforce, and should not be used as a reason for rejection.

In respect of (b), IDA considers that it would be reasonable to require OpenNet to use its best endeavours to resolve the issue with the relevant party before declaring that there is an obstruction.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 5.4(c) to give effect to the above.

(d)   the Transmission Tie Cable (installed pursuant to Co-location Service in Schedule 12) for connection to the NBAP Connection is yet to be operational at the point in time of OpenNet's provisioning of the NBAP Connection;

CLAUSE 5.4(e) – MODIFICATION REQUIRED

(e)   OpenNet has not rolled out its Network to the designated Building MDF Room; or

IDA Directed Modifications: An industry respondent commented that OpenNet should not be allowed to reject a Request if it failed to roll out its Network due to its own default.

After careful consideration, IDA agrees that the suggestion above is reasonable as the Requesting Licensee should not be penalised for OpenNet's default. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to incorporate this suggestion. For example, to satisfy this requirement, the following line could be added immediately at the end of clause 5.4(e): "and as at the date such Request is processed, OpenNet was not required to roll out its Network to such location under the terms of OpenNet's FBO Licence."

(f)   there are security and confidentiality requirements or restrictions imposed on OpenNet by Government Agencies.

5.5   Where the NBAP TP location is initially deemed to be inaccessible, OpenNet and the Requesting Licensee shall conduct a joint site survey on a mutually agreed date to select an alternative NBAP TP location. For the avoidance of doubt, the Requesting Licensee will be required to pay Onsite Charges for this joint site survey and all subsequent joint site surveys.

5.6   Without prejudice to clause 5.4, the Requesting Licensee shall pay OpenNet the applicable Installation Charge and Patching Charge specified in Schedule 15 (Charges) for the provisioning of the NBAP Connection.

5.7   In addition to the Installation Charge and Patching Charge, the Requesting Licensee shall be liable to pay a one-time charge for installation of the OpenNet Network from

the designated Building MDF Room to the NBAP TP which will include ducting and/or trenching in order to reach the NBAP TP.

5.8   Where OpenNet considers it reasonably necessary to conduct site visit(s) to assess the NBAP Connection Request from the Requesting Licensee, OpenNet shall provide reasons for the site visit(s), and the Requesting Licensee shall be liable to pay all applicable Onsite Charges for such site visit(s).

CLAUSE 5.9 – MODIFICATION REQUIRED

5.9   Where OpenNet rejects the Request for NBAP Connection, OpenNet shall provide reasons explaining the basis for rejection.

IDA Directed Modifications: Comments were received that the timeframe for accepting or rejecting a Request is inappropriate and overly lengthy.

IDA has considered the issue carefully and agrees that it would be reasonable to require OpenNet to promptly notify the Requesting Licensees of any rejection and explain the basis of such rejection. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 5.9 to incorporate the above requirements.

CLAUSE 5.10 – MODIFICATION REQUIRED

5.10   Where OpenNet informs the Requesting Licensee that the Request is accepted, OpenNet will inform the Requesting Licensee of the one-time charge payable for the installation of the OpenNet Network from the designated Building MDF Room to the NBAP TP (which will include ducting / trenching to reach the NBAP TP) and the service activation period for the NBAP Connection. OpenNet shall provide a reasonable breakdown of the charge components for this one-time charge.

IDA Directed Modifications: The industry commented that the service activation period must be reasonably determined by OpenNet and OpenNet cannot be simply be left to determine the service activation period at its discretion. IDA has reviewed the comment and agrees that any service action period proposed by OpenNet should be subject to the test of reasonableness. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 5.10 to comply with the above.

5.11   The Requesting Licensee must provide its acceptance of the service activation period and agreement to pay the one-time installation charge to OpenNet within:

(a) twenty (20) Business Days (the Initial Period); or

(b) (upon OpenNet's receipt of the Requesting Licensee's written request no later than five (5) Business Days before the expiry of the Initial Period) within a further period of ten (10) Business Days in addition to the Initial Period,

failing which, the Request shall be deemed cancelled and the Requesting Licensee shall be liable for Cancellation Charges in accordance with Schedule 15 (Charges).

5.12   Where the Requesting Licensee provides its acceptance of the service activation period and agreement to pay the one-time installation charge, the service activation period shall be deemed to commence on the next Business Day from the date the acceptance is received by OpenNet.

CLAUSE 6 – MODIFICATION REQUIRED

6.   DELIVERY

IDA Directed Modifications: IDA refers to section 9 of the Explanatory Memorandum to this Direction, in relation to the timely status updates of any delays. Accordingly, IDA directs OpenNet to propose, for IDA's consideration, modifications to clause 6 to comply with the above.

6.1   OpenNet shall provide the NBAP Connection by the end of the service activation period.

6.2   Unless otherwise stated, OpenNet shall retain the responsibility for working at OpenNet's FDF at the Central Office and Building MDF Room, and the NBAP TP, including Patching Service at OpenNet's FDF at the Central Office and Building MDF Room in accordance with Schedule 13 on Patching Services. The Requesting Licensee shall bear the Charges for such work carried out by OpenNet.

6.3   Where the Requesting Licensee requests for a NBAP Connection for the purpose of providing OE services, 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 NBAP Connection.

6.4 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)deliver the NBAP Connection.

6.5 OpenNet will test the optical fibre cable from OpenNet's FDF at its designated Central Office or the Requesting Licensee's FDF at the Central Office designated by OpenNet to the NBAP TP to ensure that the NBAP Connection falls within the specified optical performance. Testing will be conducted at wavelengths of 1310nm, 1490nm and 1550nm.

6.6 OpenNet shall ensure that the optical power loss:

(a) of any NBAP Connection for the purpose of provision of GPON services does not exceed -28dB; and

(b) of any NBAP Connection for the purpose of provision of OE services does not exceed -20 dB from OpenNet's FDF at its designated Central Office or the Requesting Licensee's FDF at the Central Office designated by OpenNet 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 NBAP TP.

6.7 OpenNet shall promptly notify the Requesting Licensee upon the completion of the NBAP Connection.

6.8 Subject to clause 6.9, 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 NBAP Connection, subject to a maximum of 30 times the weekly recurring charge for the NBAP Connection (**Weekly Recurring Charge**), where:

Weekly Recurring Charge = Monthly recurring charge x 7 / 30

CLAUSE 6.9 – MODIFICATION REQUIRED

6.9 OpenNet shall not be required to compensate the Requesting Licensee under any of the following circumstances:

(a)   Delay in the granting of permission from or permission is not granted to install the required Network to the NBAP TP;

(b)   The Requesting Licensee requests the deferment of the service activation date; or

(c)   The designated Building MDF Room which was initially under network coverage is demolished and/or reconstructed.

For the avoidance of doubt, where the service activation date has been revised pursuant to any of the circumstances contemplated in this clause 6.9 or elsewhere in the ICO Agreement (unless otherwise stated), OpenNet shall nevertheless be required to compensate the Requesting Licensee if it fails to meet the revised implementation timeline.

IDA Directed Modifications: Clause 6.9 sets out several circumstances under which OpenNet would not be required to compensate Requesting Licensees.

IDA received a number of comments concerning this clause. In particular, it was suggested that clause 6.9(a) should be subject to two requirements: (a) OpenNet must have used its best endeavours to obtain any licence or permission expeditiously; and (b) OpenNet must provide Requesting Licensees with evidence of such licence/permission, the steps taken to obtain it expeditiously and why OpenNet cannot obtain the licence/permission.

After careful consideration, IDA agrees that OpenNet should be required to use its best endeavours to obtain expeditiously the necessary licences or permission mentioned in clause 6.9(a). However, IDA is of the view that it is not necessary to require OpenNet to furnish evidence of this in every case. Instead, it would be more efficient if OpenNet were required to furnish evidence only in the event that a challenge or dispute is raised by Requesting Licensees as to whether OpenNet has used its best endeavours in the manner described above.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 6.9(a) to incorporate the above requirements.

7. RESPONSIBILITY AT 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, and the NBAP TP.

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 an application for termination of the existing Patching Service and order for a new Patching Service at the Central Office or Building MDF Room in accordance with Schedule 13 (Patching Service).

8. DEACTIVATION

CLAUSE 8.1 – APPROVED

8.1 Subject to the minimum contract term, the Requesting Licensee may deactivate the NBAP Connection by giving OpenNet not less than one (1) month prior written notice.

8.2 If the NBAP Connection is terminated by the Requesting Licensee pursuant to clause 8.1 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.

8.3 Where any Patching Service is no longer required as a result of the termination of the NBAP Connection, OpenNet shall remove the Patching Service at all the relevant access points and the Requesting Licensee shall be liable for the termination charges for removing the Patching Service at the Central Office designated by OpenNet in accordance with Schedule 15 (Charges). Notwithstanding the above, the Requesting Licensee shall not be liable to pay any Charges for the removal of Patching Service related to or in connection with the termination of the NBAP Connection, if such termination is the result of OpenNet's fault.

9. STANDARD TERMS AND CONDITIONS

CLAUSE 9.1 – MODIFICATION REQUIRED

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

and Building MDF Room from which the NBAP Connection is provided. The Requesting Licensee, its agents or sub contractors shall not tamper with, modify, remove or re-locate any Termination Point or any part of the Network in any way or take steps to repair any Termination Point or any part of the Network.

IDA Directed Modifications: Comments were received that clause 9.1 as drafted gives OpenNet very wide discretion to determine its network deployment and this may result in Termination Points being installed in unsuitable locations.

To address the concern, IDA considers that it would be reasonable to require OpenNet to take into account the suitability of locations for the installation of Termination Points. In general, Termination Points should be located where they can accommodate the deployment of active equipment, with adequate ventilation and power points within the reach of active equipment. Notwithstanding, IDA also recognises that the location of the Termination Point would ultimately be dependent on the choice of the customer/Requesting Licensee.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 9.1 to: (a) give effect to the requirement that OpenNet will consider the suitability of a location (as described above) before a Termination Point is installed; and (b) state that the location of a Termination Point is ultimately subject to the choice of the customer/Requesting Licensee.

9.2   OpenNet shall be responsible for the maintenance of the NBAP Connection installed under this Schedule.. For the avoidance of doubt, if there is a fault at the Patch Cable, OpenNet will charge the Requesting Licensee an additional Patching Charge if the Requesting Licensee was responsible for the fault at the Patch Cable.

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 of 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 NBAP 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 NBAP Connection, OpenNet shall provide the Requesting Licensee with at least one (1) month's written notice in advance of such interruptions, repairs or upgrades, and shall inform Requesting Licensees of the period of service interruption. OpenNet shall take reasonable measures to minimise any service disruption to the Requesting Licensee.

CLAUSE 9.6 – MODIFICATION REQUIRED

9.6   OpenNet shall include the following details in the written notification to the Requesting Licensee:

(a)   Affected Location;

(b)   Date of occurrence;

(c)   Time of occurrence (start & end timings);

(d)   Cause of Planned Disruption;

(e)   Order Request Identifier of the affected orders; and

(f)   OpenNet's Network Operations Centre Contact Number.

The Requesting Licensee is required to acknowledge receipt of OpenNet's notification within one (1) Business Day.

IDA Directed Modifications: Comments were received that there is no justifiable reason for OpenNet to require the Requesting Licensee to acknowledge receipt of its notification within one Business Day.

In this regard, IDA requires OpenNet to provide justification as to why it requires the Requesting Licensee to acknowledge the request in the first place, as well as the short timeframe of only one Business Day. If OpenNet is unable to provide valid justification, IDA may further direct that this requirement to provide notice be removed altogether or subject to a more reasonable period. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 9.6 to address the above.

9.7   If the scheduled service interruption affects NBAP Connections, OpenNet will endeavour to carry out the scheduled service interruption between 1am and 6am, unless it is not feasible for OpenNet to do so.

9.8   Subject to Requesting Licensee acquiring redundancy service, OpenNet shall, where technically feasible, provide assistance to the Requesting Licensee to divert its NBAP Connection to the redundancy service before commencing the scheduled service interruption.

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

9.10   Subject to clause 9.6, OpenNet shall not be liable for any loss caused by such scheduled service interruption, except for any Service Level Guarantee rebate that arises from OpenNet carrying out the scheduled service interruption outside of the stipulated period and the Requesting Licensee has reported the fault in accordance to clause 11.

9.11   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.

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

        (a)   any equipment or software needed to implement, receive or use the NBAP Connection (including but not limited to any configuration of the NTE at the NBAP TP);

        (b)   co-location at the designated Central Office and Building MDF Room; and

        (c)   access to the NBAP TP location.

CLAUSE 9.13 – MODIFICATION REQUIRED

9.13   Upon receipt by OpenNet of any request from Building Management, authorities, Requesting Licensee for Removal, OpenNet shall perform such Removal which shall not include removal of any part of the Network, surface trunking and/or termination point that are concealed either by a false ceiling, within any furniture or rendered inaccessible. Requesting Licensee shall ensure and obtain the relevant approvals or consent from the relevant building owner or authorities such that OpenNet and/or its Contractor has ease of access to perform such Removal. For the avoidance of doubt,

all incidental costs including but not limited to security deposits or escort charges related to the Request for Removal shall be borne by the Requesting Licensee on a cost-oriented basis. The Requesting Licensee shall pay OpenNet according to Schedule 15 (Charges) for the Request fo Removal.

IDA Directed Modifications: IDA has received the following comments:

(a)   *Security deposits are for the assurance of conduct of the installers. It is highly inequitable for the Requesting Licensees to be guaranteeing the performance of OpenNet's contractors. OpenNet should bear its own charges such as security deposits and escort charges. For the avoidance of doubt, Requesting Licensee should not be responsible for any request made by any other party such as Building Management, authorities etc. In the event that OpenNet receives a Removal request by any other party other than Requesting Licensee for removal service, OpenNet shall inform the Requesting Licensee of such request.*

(b)   *It is OpenNet's responsibility as a NetCo to secure the relevant approvals or consents from the relevant building owner or authorities. This responsibility must not to be shifted to Requesting Licensee. Similarly, costs of obtaining such approvals or consents ought to be borne by OpenNet, not Requesting Licensee. Accordingly, clause 9.13 ought to be amended accordingly.*

IDA has carefully reviewed the industry comments and IDA's position is as follows:

(a)   *IDA agrees that the Requesting Licensee should not be responsible for any request made by any other party. If OpenNet receives a removal request from any such parties, OpenNet should inform Requesting Licensee of such request. The costs of such removal should not be borne by Requesting Licensee; and*

(b)   *IDA agrees that as the provider of the service, it is only reasonable for OpenNet to be responsible to secure the relevant approvals or consents from the relevant building owner or authorities. Accordingly, OpenNet should bear the costs related to securing such approvals or consents (including security deposit and where applicable, escort charges). That said, if there is a need*

for OpenNet to approach Requesting Licensee for assistance, Requesting Licensee should render its assistance and all parties should work together to secure the approvals or consents.

Further, IDA considers that it would promote clarity by requiring OpenNet to set out the processes that would be applicable in the situations where OpenNet receives a request for removal but the Termination Point is still in use.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 9.13 to include the above requirements and to address the scenario highlighted.

IDA also requires OpenNet to ensure consistency in its usage of defined terms. Without limitation to the foregoing, IDA notes that "Cost-Oriented Basis" is defined terms in Schedule 18, whereas there are references to "cost-oriented basis" and "cost-oriented" in this clause. Where applicable, OpenNet should ensure consistent usage of the term "Cost-Oriented Basis".

CLAUSE 9.14 – MODIFICATION REQUIRED

9.14   OpenNet shall endeavour to minimize damage to the wall and/or other fittings save that OpenNet shall not be responsible or liable to move or shift any furniture or items belonging to End-User or building owner, re-plaster the wall, perform any painting works or reinstate the wall and/or other fittings accordingly.

IDA Directed Modifications: Comments were received that OpenNet should modify the wording of clause 9.14 so as to expressly state that OpenNet would use its "best endeavours" to minimise damage to End-Users' premises. After careful consideration, IDA agrees that OpenNet must state that it will use its "best endeavours" to minimise such damage. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 9.14 to state that it will use its best endeavours to minimise such damage when removing the Termination Point.

9.15   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 NBAP Connection.

CLAUSE 9.16 – MODIFICATION REQUIRED

9.16 Onsite charges are applicable whenever Requesting Licensee requests for OpenNet to be onsite for any reason.

IDA Directed Modifications: Comments were received that OpenNet should not be allowed to impose onsite charges in cases where OpenNet needs to be present to provision the service or to be present due to its own fault or error. After careful consideration, IDA agrees that it would be unreasonable for any onsite charge to be imposed under such circumstances as it is not caused by the Requesting Licensee. '

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to this clause 9.16 to give effect to the above requirement.

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 NBAP 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.

CLAUSE 11.2 – APPROVED

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 network before reporting the fault to OpenNet. The Requesting Licensee shall pay OpenNet according to Schedule 15 (Charges) for cancellation of any fault reported regardless of the response or stage of investigation by OpenNet.

CLAUSE 11.3 – MODIFICATION REQUIRED

11.3   Upon receipt of a fault report from the Requesting Licensee under clause 11.2, 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. OpenNet shall update the Requesting Licensee as and when there is a change in status of the fault investigation/rectification work.

IDA Directed Modifications: IDA refers OpenNet to section 9 of the Explanatory Memorandum to this Direction. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 11.3 in the manner specified therein. Without limitation to the foregoing, OpenNet should provide Requesting Licensees with (a) periodic updates on the status of the fault rectification; and (b) updates when there is a change in status of the fault investigation/rectification work.

11.4   If, following investigation, OpenNet determines that the fault is at the Transmission Tie Cable at the Central Office, OpenNet will patch the NBAP Connection to another available Transmission Tie Cable Port and charge the Requesting Licensee a Patching Charge in accordance with Schedule 15 (Charges) if the Requesting Licensee was responsible for the fault at the Transmission Tie Cable at the Central Office.

11.5   If, following investigation, OpenNet determines that no fault is found or the fault is not with 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).

11.6   The process for fault investigation shall be as follows:

CLAUSE 11.6(a) – MODIFICATION REQUIRED

(a)   For each of the three (3) wavelengths of 1310nm, 1490nm and 1550nm, the optical power shall be measured in accordance with clause 6.6 above where possible, and the findings shall be clearly recorded using the "Fault Rectification Service Report" (Annex 3B).

IDA Directed Modifications: Comments were received that power loss should not be the only criterion for "no fault found" as there are numerous scenarios where the NBAP Connection could be disrupted due to faults by OpenNet. In particular, it was commented that service may continue to be disrupted even though the fibre reading is within the range due to OpenNet patching the NBAP fibre to the wrong splitter.

In this regard, IDA considers that it is reasonable to require OpenNet to propose measures to address the concerns relating to wrong patching. As an example, IDA refers to the first bullet point of clause 11.6(b), and considers that OpenNet could ensure that patching at the MDF and/or CO and the patch cords are properly installed as part of the investigation process before concluding that there is "no fault found".

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modification to clause 11.6(a) to incorporate the above requirement.

(b)   if the power loss do not exceed the limit specified in clause 6.6 then a finding of "no fault found" will be recorded, otherwise the following steps shall be carried out:

- determine that the patching at CO/MDF room and the patch cord are properly installed

- determine the optical power at the output of splitter port, for GPON is within acceptable limits

    Or determine the optical power at the output of the OE to OpenNet's FDF in the Building MDF room is within the acceptable limits

- determine that no macro bending that produces high loss

- determine that no dirty/damaged connector

- determine that no fibre cut or damaged Termination Point

measurements of the following shall also be taken :

- optical time-domain reflectometer

- power loss

CLAUSE 11.6(c) – MODIFICATION REQUIRED

(c)   Upon completion of the joint investigation, OpenNet will hand over the NBAP Termination Point to the Requesting Licensee and both Parties shall jointly sign off on the "Fault Rectification Service Report" (Annex 3B), which will state the outcome of the joint investigation.

IDA Directed Modifications: Comments were received that as currently drafted, clause 11.6(c) can be read to imply that a joint investigation is always required for the process of fault investigation, whereas this is not always the case. In addition, OpenNet should only require the Requesting Licensee to jointly sign off on the "Fault Rectification Service Report" if both parties are present onsite for fault rectification.

IDA agrees that joint investigations are not required for every case. The resources required to co-ordinate and carry out a joint investigation would likely be more onerous and burdensome than a non-joint investigation. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modification to clause 11.6(c) to clarify that the proposed process is also applicable to non-joint investigation or to provide for an additional process in relation to non-joint investigation.

In addition, IDA refers OpenNet to section 9 of the Explanatory Memorandum to this Direction. IDA reminds OpenNet that it is required to provide timely status updates to Requesting Licensees, and without limitation to the foregoing, OpenNet must inform Requesting Licensees of the cause of the fault when it resolves the fault.

CLAUSE 11.7 – MODIFICATION REQUIRED

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. For the avoidance of doubt, save as provided below, each party shall bear its own costs for the purpose of any fault investigation:

IDA Directed Modifications: IDA notes that clauses 11.7(a)-(c) apply to both fault identification coordination meetings initiated by OpenNet and joint investigations initiated by Requesting Licensees. For clarity, IDA requires OpenNet to propose, for IDA's approval, modifications to clause 11.7 to state that clauses 11.7(a)-(c) will also apply to join investigations under clause 11.9.

(a)   In the event that a particular fault is due to OpenNet or its contractors, OpenNet shall not impose any charge on the Requesting Licensee for access to the Co-Location Space (where applicable), regardless of whether it is an OpenNet-initiated fault identification coordination meeting or a Requesting Licensee-initiated joint investigation process. In addition, OpenNet shall not impose the joint investigation charge on the Requesting Licensee even if the fault identification process is initiated by the Requesting Licensee.

(b)   In the event that a particular fault is due to the Requesting Licensee or its contractors or its End-Users, OpenNet shall be entitled to impose a charge on the Requesting Licensee for access to the Co-Location Space (where applicable), regardless of whether it is an OpenNet-initiated fault identification coordination meeting or an Requesting Licensee-initiated joint investigation process. In addition, OpenNet shall also be entitled to impose the joint investigation charge on the Requesting Licensee if the fault identification process is initiated by the Requesting Licensee.

(c)   In the event that it is agreed that a particular fault is not due to OpenNet (or its contractors) or the Requesting Licensee (or its contractors or End-Users), OpenNet shall be entitled to impose a charge on the Requesting Licensee for access to the Co-Location Space (where applicable) only if it is an Requesting Licensee-initiated joint investigation process. In addition, OpenNet shall also be entitled to impose the joint investigation charge on the Requesting Licensee if the process was initiated by the Requesting Licensee.

CLAUSE 11.7(d) – MODIFICATION REQUIRED

(d)   Except for (a) above, if it is discovered that any part of the Network located on the Residential Premise is damaged, the Requesting Licensee shall be liable to OpenNet for the relevant charges in accordance to Schedule 15 (Charges) accordingly.

IDA Directed Modification: IDA notes that the above clause is not applicable as the Network is not located on a Residential Premise. In any case, IDA is of the view that since the Requesting Licensee and its contractors are not permitted to tamper with or repair any part of the Network under this Schedule, there is no basis for the Requesting Licensee to be made liable to OpenNet for such damage to the Network, unless it can be proven that Requesting Licensee had caused the damage.

In view of the above, IDA requires OpenNet to deal with the Customer/End-User directly for any damage to the Termination Point unless such damage is caused by the Requesting Licensee. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modification to clause 11.7(d) to comply with the above requirement.

11.8 The NBAP Connection is deemed to be restored when OpenNet has tested and confirmed to the Requesting Licensee that the NBAP Connection has been restored.

CLAUSE 11.9 – MODIFICATION REQUIRED

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 NBAP 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. Additionally, where the Requesting Licensee disputes OpenNet's findings, the Requesting Licensee shall request OpenNet for a 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). Where the Requesting Licensee changed the appointment for the joint investigation without giving OpenNet sufficient notice of at least one (1) Business Day, the Requesting Licenss shall pay Opennet the Missed Appointment Charge in accordance with Schedule 15 (Charges). The process for a joint investigation shall be as described in clause 11.6.

IDA Directed Modifications: IDA refers OpenNet to its directed modifications to clause 11.7 above. For consistency, IDA directs OpenNet to propose, for IDA's approval, modifications to state that clauses 11.7(a)-(c) will apply to joint investigations under clause 11.9.

While IDA agrees that there should be a process available for Requesting Licensees to raise any disagreements with the findings of OpenNet's fault investigations, IDA disagrees that such a process should be treated as a joint investigation process. IDA's view is that it is more reasonable for OpenNet to resolve such disagreement through the fault identification coordination meeting. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 11.9 to provide for the above process.

Further, IDA refers OpenNet to section 12 of the Explanatory Memorandum to this Direction. Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to clause 11.9 in the manner specified therein. Without limitation to the above, OpenNet should remove all references to Missed Appointment Charges.

11.10   The Requesting Licensee acknowledges that OpenNet may temporarily disconnect the Requesting Licensee's NBAP Connection to perform reasonable fault analysis and line testing on the NBAP Connection. OpenNet shall conduct such disconnections only as it reasonably considers necessary. OpenNet shall notify the Requesting Licensee at least thirty (30) minutes before the temporary disconnection and provide its reasons for the temporary disconnection.

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 NBAP Connections acquired by the Requesting Licensee 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. For the avoidance of doubt, the MTTR is calculated as follows:
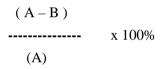
$$\frac{\sum X}{Y}$$

Where X = Time taken to restore fault incidents for each NBAP Connection during a month as described above

Y = Total number of affected NBAP Connections in the same 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 NBAP Connection, subject to a maximum of 30 times the Weekly Recurring Charge for the NBAP Connection.

12. SERVICE LEVEL AVAILABILITY

12.1 OpenNet shall offer a service level availability of 99.99% per month for the NBAP 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 NBAP 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 NBAP 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's NBAP 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 NBAP TP.

13.2 Each Party shall, so far as reasonably practicable, take all necessary steps to ensure that the licence of the NBAP 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**

CLAUSE 14.1 – APPROVED

14.1   The minimum contract term for a NBAP Connection shall be one (1) month or twelve (12) months, as the case may be, starting from the service activation date of the NBAP Connection.

15.   **SUSPENSION**

15.1   OpenNet may suspend the Requesting Licensee's licence to the NBAP Connection at any time until further notice to the Requesting Licensee if the NBAP 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. If the suspension is the result of the Requesting Licensee's fault, the Requesting Licensee shall continue to pay the Monthly Recurring Charge during the period of suspension.

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 NBAP 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 NBAP 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 NBAP Connection within six (6) months from the service activation date of the NBAP Connection. If the Requesting Licensee fails to do so, OpenNet will deactivate the NBAP Connection upon giving the Requesting Licensee ten (10) Business Days prior notice and the Requesting Licensee did not dispute such written

notice given by OpenNet. The Requesting Licensee must pay OpenNet the Monthly Recurring Charges for the remainder of the minimum contract term.

16.3   OpenNet may immediately terminate a licence of NBAP Connection under this Schedule if:

(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 NBAP Connection under the OpenNet ICO or exempts OpenNet from supplying NBAP 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 NBAP 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 NBAP 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 NBAP Connection is used other than the purposes specified in clause 1;

(g)   the licence in respect of Co-Location Space to which the NBAP Connection is connected has been terminated or has expired;

(h)   the NBAP Connection has become unsafe for its purpose; or

(i)   OpenNet's right to own, maintain or operate the NBAP Connection has been revoked or terminated or has expired.

16.4   Either Party (**Terminating Party**) may terminate the NBAP Connection:

(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;

(b) if the Requesting Licensee's NBAP Connection licence has been suspended pursuant to clause 15.1, and the cause of such suspension has not been remedied or rectified for a period of sixty (60) Calendar Days from the date of the suspension; or

(c) 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).

16.5 Upon termination of the licence of NBAP Connection:

(a) the Requesting Licensee must immediately discontinue the use of the NBAP Connection; and

(b) the Requesting Licensee must without undue delay disconnect all equipment connected to the NBAP Connection; and

(c) OpenNet shall be responsible for removing all necessary Patching Services at the Requesting Licensee's cost in accordance with Schedule 15 (Charges). Notwithstanding the above, the Requesting Licensee will not be liable for OpenNet's costs of removing all necessary Patching Services, if the termination is the result of OpenNet's fault.

16.6 If the licence of a NBAP Connection is terminated as a result of the Requesting Licensee's fault, the Requesting Licensee shall be liable to OpenNet for the Monthly Recurring Charges for the remainder of the minimum contract term.

16.7 If the Requesting Licensee fails to disconnect its equipment from the NBAP Connection under clause 16.5(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 NBAP Connection.

17.   REDUNDANCY SERVICE

17.1   The Requesting Licensee may acquire:

(a)   for a NBAP Connection for the purpose of providing GPON services, one separate fibre strand from OpenNet's splitter at the Building MDF Room to the NBAP TP; or

(b)   for a NBAP Connection for the purpose of providing OE services, one separate fibre strand from OpenNet's FDF at the Building MDF Room to the NBAP TP

(**Redundancy Service**) at the same prices, terms and conditions as the NBAP Connection through a request in the form of Annex 3A, 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 NBAP 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 NBAP Connection.

17.3   The Requesting Licensee is eligible to acquire a Redundancy Service for the NBAP Connection provided that the Requesting Licensee has acquired or is acquiring an equivalent NBAP Connection to the same NBAP TP. The Requesting Licensee may request OpenNet to reject the Request for the NBAP Connection in the event that OpenNet is unable to provide the Redundancy Service, but such Requests for the NBAP Connection and the Redundancy Service must be submitted together to OpenNet.

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   OpenNet shall make the Redundancy Service available to the Requesting Licensee, except where OpenNet is unable to build the requisite infrastructure (other than fibre) to provide the Redundancy Service or due to any of the reasons stated in clause 5.4.

ANNEX 3A: REQUEST FORM FOR NBAP CONNECTION

ANNEX 3A – APPROVED

Request for NBAP Connection

Date of Application: _____ Application   Reference   Number:\

_____   _____

End-User Name:

_____

NBAP address or description of address; GPS co-ordinates and height (Please attach map):

_____

Technology: GPON / OE

Term of Licence :

☐ One (1) month / ☐ Twelve (12) months

Any other info: _____

☐   Redundancy Service is required

☐   Request for NBAP Connection to be rejected if Redundancy Service is not available

For and on Behalf of Requesting Licensee

Sign: Company Stamp:

_____   _____

Name: Company Name:

_____   _____

Designation:

_____

Contact Number, Fax and email address

_____

Part 1:   Date: _____

☐   Application accepted and will proceed with detailed study:

Circuit Identification Number: _____

☐   Application rejected

Reason for rejection: _____

OpenNet Name / Signature: Queue Status:

_____   _____

Part 2:   Date: _____

☐   Circuit Provision:

Provision Date: _____

Digging and Trenching Work Charges: _____ (Breakdown of charges to be attached)

☐   Application rejected

Reason for rejection: _____

OpenNet Name / Signature:

_____

Requesting Licensee Acceptance:

We **agree** that we are liable for the digging and trenching work charges and agree with the service provisioning date stated (both) above.

_____

Sign: Company Stamp:

_____   _____

Name: Company Name:

_____   _____

Designation:

_____

Contact Number, Fax and email address

ANNEX 3A: REQUEST FORM FOR NBAP CONNECTION

_____

ANNEX 3B: FAULT RECTIFICATION SERVICE REPORT

OpenNet BROADEN YOUR MIND	Fault Rectification Service Report	Serial No:

Appointment Date:	Arrival Time:
Time:	Completion Time:
Trouble Ticket No:	☐ 1 hour activation ☐ Maintenance Fault Rectification ☐ Follow up end-user appointment

END-USER INFORMATION

Authorised Person Name:	*Mr/Mrs/Miss/Mdm/Dr		
*NRIC/FIN/Passport No:			
Contact no:		(HP):	
Company:		BRN:	
Registered Address:	Blk/House _____ Unit No: #_____ - Street Name: _____ Building Name: _____ Postal code: S( )		

LOCATION OF INSTALLATION

A-END (CO/MDF)	B-END (CO/MDF, End-User's Premise)
Blk/House: _____ Unit No: #_____ - _____ Street Name: _____ Building Name: _____ Postal code: S(_____)	Blk/House: _____ Unit No: #_____ - _____ Street Name:_____ Building Name: _____ Postal code: S(_____)

Declaration (check only one box)

☐   I am the owner of the above premises

☐   I, Name: _____. NRIC _____ am authorised by the owner of the premise and/or the above-stated company to sign this form and permit OpenNet Pte Ltd or its contractor to enter the premises and conduct the fault rectification work. I will bear full responsibility if the owner should dispute (a) my authority, or (b) any action taken by OpenNet Pte Ltd at my instructions.

Company Stamp (if applicable): _____

For Official Use Only

OPTICAL MEASUREMENTS, WHERE POSSIBLE (Measured by RL)

Fault description:

Test Measurement (CO to Serving Cabinet):	1310nm		1490nm		1550nm		Distance (m)	
Test Measurement (CO to 1st TP):	1310nm		1490nm		1550nm		Distance (m)	
Test Measurement (Segment Services A-END to B-END)	1310nm		1490nm		1550nm		Distance (m)	

Certified by ON:

Technician Name:	Date:
Technician Signature:	Time:

OPTICAL MEASUREMENTS, WHERE POSSIBLE (Measured by ON)							
Fault description:							
Test Measurement (CO to Serving Cabinet):	1310nm		1490nm		1550nm		Distance (m)
Test Measurement (CO to 1st TP):	1310nm		1490nm		1550nm		Distance (m)
Test Measurement (Segment Services A-END to B-END)	1310nm		1490nm		1550nm		Distance (m)

Certified by :		
RL Name:	Date:	
RL Signature:	Time:	

Fault Root Cause Description

ACTION TAKEN/ADDITIONAL REMARKS

Customer ACKNOWLEDGEMENT AND ACCEPTANCE	
Remarks/Comments:	
This is to acknowledge that the fibre fault rectification has been attended and the fault resolution is effective	

Fault Attended by:		Resolution Accepted by End-User:	
Technician Name:		End-User Signature:	
Technician Signature:			

Resolution Verified and Accepted by RL (Only applicable for 1 hour activation) :			
RL Name:		RL Signature:	

End-Users can refer to their retail service providers for more information to address and resolve any end user service related issues.

*Please delete where inapplicable.

ANNEX 3B – MODIFICATION REQUIRED

IDA Directed Modifications: Comments were received in respect of the "Declaration" section of Annex 3B that the Requesting Licensee should not be the party permitting OpenNet to enter the End-User's premise. IDA agrees that the "Declaration" section is intended for the End-User to make the declaration and not the Requesting Licensee.

Several industry respondents have commented that the NRIC/FIN/Passport Number of the End-User is currently not required, and therefore OpenNet should similarly not require the NRIC/FIN/Passport Number of the End-User to be provided. A respondent also raised the issue of maintaining customer privacy. IDA agrees with the comments provided and agrees that OpenNet should not require Requesting Licensee/End-User to provide the NRIC/FIN/Passport Number of the End-User. Similarly, IDA also holds the view that company's BRN is not necessary.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, modifications to Annex 3B to reflect the above requirements.