

APPENDIX 1

**REQUIRED MODIFICATIONS TO SCHEDULE 14 – OSS/BSS
CONNECTION & PROFESSIONAL SERVICE**

SCHEDULE 14

OSS/BSS CONNECTION & PROFESSIONAL SERVICE

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OSS/BSS CONNECTION & PROFESSIONAL SERVICE

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SCHEDULE 14

OSS/BSS CONNECTION & PROFESSIONAL SERVICE

IDA's Directed Modifications: IDA refers to paragraph 7 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Schedule 14 to clarify: (a) when RLs are allowed to order the Standard Connectivity Service without ordering the Professional Service; and (b) that RLs are required to have successfully undergone the Platform Interconnection Testing Process in order to establish B2B Web Services Connectivity ("Scope of Professional Service").

IDA refers to paragraphs 11, 12 and 13 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Schedule 14 to include a simpler ordering process for the Professional Service for RLs who wish to establish B2B Web Services Connectivity (without any customisation to the existing Platform API). The simpler ordering process should take into account the requirements as highlighted in paragraphs 11 and 12 of the Explanatory Memorandum ("Simplified Process for Professional Service").

The industry commented that OpenNet should state that a single application for connection should include connectivity to both test and production environments under Clause 4.4. IDA understands that under OpenNet's existing process, OpenNet will require an RL to submit two separate requests for the Professional Service for the purpose of establishing connectivity to OpenNet's test platform and OpenNet's (actual) Platform. The above process has been put in place by OpenNet because of the different configurations needed in the test and actual platforms, and as connectivity to the test platform is not always necessary. In situations where OpenNet requires RLs to establish

connectivity to both its test platform and Platform (“Dual Connectivity”) (e.g., where RLs are required to undergo the Platform Interconnection Testing Process prior to their actual connection to the Platform), IDA agrees with the industry that there is no strong justification to insist on the submission of two separate requests and there is merit in OpenNet streamlining its existing process to only require the submission of one Professional Service request for the Dual Connectivity. IDA is also of the view that it is necessary to clarify that separate requests for the Professional Service would be needed to establish connectivity to the test platform and actual Platform for cases when the Dual Connectivity is not required by OpenNet but initiated by the RLs. Accordingly, IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to Schedule 14 to incorporate and clarify the above.

IDA refers to paragraph 15 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to Schedule 14 to incorporate the Change Management Process.

IDA refers to paragraph 25 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to its ICO: (a) to allow RLs to submit requests via the OpenNet Platform as well as via the Manual Ordering Process; and (b) on how it would process requests received via the different methods.

IDA notes that there is inconsistency in the use of terminology for OpenNet’s Service Portal (i.e., “Service Portal” and “OpenNet’s Service Portal” have been used interchangeably) and RL’s request for OSS/BSS Connection (i.e., “OSS/BSS Connection Request”, “Connection Request” and “Request” have been used interchangeably) in Schedule 14. IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to Schedule 14 to ensure consistency in the use of terminology for OpenNet’s Service Portal and RL’s request for OSS/BSS Connection.

The industry commented that there must be an obligation on OpenNet to provide sufficient API specification documentation to enable the RL to develop the necessary interface programmes for the RL's system to connect to the OpenNet Platform. IDA agrees that such an obligation is necessary and reasonable. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Schedule 14 to incorporate the above.

1. GENERAL

1.1 This Schedule sets out the terms and conditions under which OpenNet will provide the Requesting Licensee with OSS/BSS Connection Services (“**OSS/BSS Connection & Professional Service**”) for Requesting Licensee to connect and access to OpenNet Platform. The services also allow Requesting Licensee to integrate and interface its Routers, switches, Firewalls, Servers, etc (“**OSS/BSS Connection Equipment**”) with OpenNet’s OSS/BSS through a set of Open System APIs offered by the OpenNet Platform. The OSS/BSS functions available to the Requesting Licensees include network coverage check, order management and fault management.

1.2 Except as provided in this Schedule, the Requesting Licensee shall, at its own cost, provide all hardware, software and manpower needed to connect and access to the OpenNet Platform. Where any work or services are to be carried out by OpenNet under this Schedule, and the quantum of the Charge is not defined under Schedule 15 (Charges), the Requesting Licensee must pay all the reasonable costs incurred by OpenNet in provisioning OSS/BSS Connection & Professional Service, subject to the following conditions:

(a) the costs incurred by OpenNet will relate to the work that OpenNet needs to perform in order to provision the OSS/BSS Connection & Professional Services for Requesting Licensee to connect and access to the OpenNet Platform;

(b) before incurring the costs, OpenNet will provide Requesting Licensee with prior reasonable notice that the Requesting Licensee’s request requires OpenNet to undertake such work and such notice shall clearly and with sufficient detail set out the following:

(i) the reasonable costs which OpenNet seeks to recover from the Requesting Licensee; and

- (ii) based on the information set out in paragraph (i) above, a binding quote to the Requesting Licensee in respect of the work to be undertaken by OpenNet which shall be valid for a period of ten (10) Business Days (or such other time as may be agreed between the Parties) from the date they are notified to the Requesting Licensee by OpenNet;
- (c) OpenNet shall obtain the prior approval of the Requesting Licensee to the costs noted in the notice within the time period under paragraph (b)(ii). For the avoidance of doubt, the Requesting Licensee shall not be liable to bear any costs incurred by OpenNet under clause 1.2 unless the Requesting Licensee has given its prior approval under this clause 1.2(c), and OpenNet shall not be obliged to perform any work or service until the Requesting Licensee has agreed to such costs; and
- (d) any dispute in respect of determining the reasonable costs set out in the notice shall be resolved in accordance with Schedule 17 of the ICO Agreement.

1.3 The OpenNet Platform consists of:

- (a) Service Portal with contents and functionalities for Requesting Licensees to conduct business transactions with OpenNet; and
- (b) System APIs exposed to Requesting Licensees' systems allowing electronic flow through business transactions.

To facilitate Requesting Licensees connecting to the OpenNet Platform, two types of access methods are allowed (at Requesting Licensees' cost):

- (i) Internet via secure VPN
- (ii) Dedicated Leased Connection

The Internet via secure VPN connection may be disconnected for reasons out of OpenNet's control. For the avoidance of doubt, Requesting Licensee is responsible for re-establishing the connection when the Internet via secure VPN connection or Dedicated Leased Connection is down.

IDA's Directed Modifications: One respondent has submitted that clause 1.3 does not address situations when the connections (Internet via secured VPN or dedicated leased connections) are down due to OpenNet's or the RL's fault. In addition, the respondent also commented that (a) OpenNet must inform the RL as soon as possible if it is aware that there is a disconnection; and (b) OpenNet must provide prompt support and assistance to re-establish the connection at no additional cost if the disconnection is not due to the RL's fault or equipment. IDA agrees with the industry that the ICO should be made clearer to address the above situations. IDA also agrees with the respondent that it is reasonable to require OpenNet to: (a) inform RLs of such disconnections as soon as possible if OpenNet discovers such disconnections; and (b) to provide prompt support and assistance to re-establish the connections. However, IDA is of the view that it may not be reasonable to require OpenNet to bear the cost of providing support and assistance if the disconnection is not caused by OpenNet but caused by the RL or another third party. In IDA's view, OpenNet should bear the cost of such support and assistance if the disconnection is attributable to any default on the part of OpenNet. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to clause 1.3 to effect the above.

1.4 Subject to the Requesting Licensee subscribing to B2B Web Services Interface, the Requesting Licensee shall request from OpenNet the relevant APIs provided that the Requesting Licensee have signed up to the associated schedules of the ICO. The Requesting Licensee shall adhere to all specifications (including APIs) provided by OpenNet.

IDA's Directed Modifications: IDA agrees with the industry's comment that it may be too restrictive for OpenNet to provide the specifications (including APIs) only upon RLs executing Schedule 14. This is because some RLs may want to review the specifications (including APIs) to decide on whether, and if so how, they wish to connect to the OpenNet Platform. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to clause 1.4 to allow RLs, who

have executed the ICO and indicated their intent to acquire the Standard Connectivity Service, to request the list of specifications (including APIs).

1.5 OpenNet shall not be liable for any claims, damages or liabilities which may arise from OpenNet's provision of the OSS/BSS Connection & Professional Services other than to the extent that it is the result of a grossly negligent, wilful or reckless breach of this Schedule 14 by OpenNet.

IDA Directed Modifications: As OpenNet is the Party providing the OSS/BSS Connection & Professional Service, it is fair and reasonable to expect that OpenNet must take all reasonable precautions in maintaining the OSS/BSS Connection Service and in the provision of the OSS/BSS Professional Service so as to prevent any damage to the Requesting Licensee. In this respect, IDA does not consider it fair or reasonable for OpenNet to exclude liability arising from its own negligent acts, given that OpenNet would be expected to exercise reasonable care as the provider of the OSS/BSS Connection & Professional Service.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 1.5 to replace the reference to "grossly negligent" with the more reasonable standard of "negligent".

2. MODE OF CONNECTION

2.1 OpenNet offers the following modes for connectivity to the OpenNet platform ("Connection Modes"):

- (a) Service portal GUI, via
 - (i) Public Internet secured VPN Client software
- (b) B2B Web Services Interface, via
 - (i) Public Internet secured VPN

- (ii) Dedicated Leased Connection (refer to Section II of Annex 14B)

IDA's Directed Modifications: IDA agrees with the industry's comment that OpenNet should insert “; or” at the end of the sentences in Clause 2.1(a)(i) and Clause 2.1(b)(i) for clarity. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to clause 2.1 to incorporate the above.

3. STANDARD SERVICES – CONNECTIVITY VIA SERVICE PORTAL GUI

- 3.1 OpenNet will provide user account(s) and the required password(s) for access to the Service Portal in accordance to the order request in Annex 14A, subject to the Requesting Licensee requesting for connectivity via Service Portal GUI.
- 3.2 The OpenNet Service Portal will provide the standard functionality of Account Management, Network Coverage Check, Order Management and Fault Management. A brief description of the various modules is as follows:

IDA's Directed Modifications: The industry requested that OpenNet provide more details on the various modules listed in clause 3.2. IDA agrees that it would be beneficial for the industry if more details can be provided for greater transparency. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 3.2 to provide more details on the various modules.

- (a) Account management include features like account password change, user account details change, viewing of billing reports.
- (b) Network coverage check includes features like checking of rollout status (e.g. Homes Passed and Homes Reached), dwelling type, network rollout time schedule.
- (c) Order management includes features like order submission, appointment booking, status enquiry and order cancellation.
- (d) Fault management includes features like fault reporting and tracking of resolution process, incident management.

3.3 Requesting Licensee shall access the OpenNet Service Portal using the following connection option:

(a) Requesting Licensee shall access the OpenNet Service portal GUI via public Internet secured VPN client application. Requesting Licensee shall configure its own firewall settings and allow the VPN connection. Requesting Licensee is required to inform OpenNet of its IP address and port connection setting. Requesting Licensee shall ensure the client setup is according to the specifications indicated in order to be granted the access. For avoidance of doubt, the Requesting Licensee shall provide at its own cost the necessary equipment and facilities such as web browser and Internet connection, and install the VPN client application software provided by OpenNet to connect and access to the OpenNet Service portal. The Requesting Licensee shall pay to OpenNet the Charges for provisioning the user account and connectivity setup for client-based Public Internet secured VPN access as provided in Schedule 15 (Charges).

3.4 Requesting Licensee will not be able to use the same User Account to login to the Service Portal simultaneously.

3.5

IDA's Directed Modifications: IDA directs OpenNet to remove Clause 3.5 from Schedule 14 if it is an editorial error.

4. STANDARD SERVICES – CONNECTIVITY VIA B2B WEB SERVICES

4.1 OpenNet will provide the standard functionality of the OSS/BSS interface which includes network coverage check, order management and fault management. A brief description of the various modules can be found in Clause 3.2 above.

4.2 OpenNet will provide consultation for system integration and interfacing to OpenNet's Platform APIs as a value-added service under OSS/BSS Professional Services. The Requesting Licensee must pay the Charge(s) as defined in Schedule 15.

IDA's Directed Modifications: The industry submitted that it was not clear which Charges in Schedule 15 would be applicable for the B2B Web Services via Public Internet secured VPN and B2B Web Services via Dedicated Leased Connection (i.e., whether RLs needed to pay the

Charges in paragraphs 14.2.2, 14.3.1 and 14.3.2 of Schedule 15). IDA agrees that this is unclear and that there is merit in OpenNet clarifying this. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 4.2 to clarify the Charges (if any) in Schedule 15 that would be applicable for the various services.

4.3 The Requesting Licensee will be charged for setup, support and use of OpenNet's testing environment upon request, under OSS/BSS Professional Services. Such Charges are defined in Schedule 15.

IDA's Directed Modifications: The industry submitted that it was not clear which Charges in Schedule 15 would be applicable for the B2B Web Services via Public Internet secured VPN and B2B Web Services via Dedicated Leased Connection (i.e., whether RLs needed to pay the Charges in paragraphs 14.2.2, 14.3.1 and 14.3.2 of Schedule 15). IDA agrees that this is unclear and that there is merit in OpenNet clarifying this. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 4.3 to clarify the Charges (if any) in Schedule 15 that would be applicable for the various services.

4.4 Requesting Licensee shall connect to OpenNet Platform via host-to-host interface from Requesting Licensee's system to OpenNet Platform to implement flow-through business transactions with OpenNet using the following connection options for open system API:

(a) Requesting Licensee shall connect via the secured VPN. Requesting Licensee is required to inform OpenNet its IP address and port connection settings. Requesting Licensee shall ensure the VPN setup is according to the specifications in Annex 14B in order to be granted the access. The Requesting Licensee shall pay to OpenNet the Charges for provisioning the user account and connectivity setup for Public Internet secured VPN access as provided in Schedule 15 (Charges).

(b) Requesting Licensee shall connect via Dedicated Leased Connection. Requesting Licensee is required to inform OpenNet its IP address and port connection setting. Requesting Licensee shall ensure the setup is according to the specifications indicated in order to be granted the access.

The Requesting Licensee shall pay to OpenNet the Charges for provisioning the user account, the port required for connection to firewall, and the connectivity setup for Dedicated Leased Connection, as provided in Schedule 15 (Charges).

- 4.5 Requesting Licensee will not be able to use the same account to interact with OpenNet's APIs simultaneously.

IDA's Directed Modifications: The industry commented that it was not reasonable for OpenNet to impose a restriction whereby the same account could not be used to interact with OpenNet's APIs concurrently, as the nature of the B2B interface was to support simultaneous high volume connections. IDA understands that OpenNet's purpose is to state that the account used to interact with the OpenNet Service Portal GUI cannot be used to interact with OpenNet's B2B Web Services Interface simultaneously. Otherwise, multiple instances of the same account can be used to interact with OpenNet's APIs concurrently. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 4.5 to clarify that an account will not be able to be used to interact with OpenNet's Service Portal GUI and OpenNet's B2B Web Services Interface simultaneously, and to further clarify that multiple instances of the same account can otherwise be used to interact with OpenNet's APIs concurrently.

5. ORDERING AND PROVISIONING PROCEDURE FOR STANDARD SERVICES

- 5.1 OpenNet shall process all Requests for OSS/BSS Connections on a 'first come, first served' basis.
- 5.2 The Requesting Licensee shall use either of the Connection Modes specified in Clause 2 to access the functionality and services in the OpenNet Platform.
- 5.3 OpenNet will be responsible to setup and configure OpenNet's firewall to allow the Requesting Licensee to connect and access to OpenNet Platform using either Internet via secure VPN or Dedicated Leased Connection or both methods.

5.4 Requesting Licensee shall be responsible to liaise with OpenNet to set up and configure its own firewall to facilitate connection and access between its users/systems and the OpenNet platform.

5.5 If Requesting Licensee chooses to set up the Dedicated Leased Connection to OpenNet Platform, the firewall port and the connectivity setup charges as stated will be applicable.

IDA's Directed Modifications: The industry submitted that it was not clear which firewall ports and connectivity charges were applicable when the RLs chose to set up the Dedicated Leased Connection to the OpenNet Platform. For clarity, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 5.5 to clarify that the above charges are the firewall port and connectivity setup charges as stated in Schedule 15 – Charges.

5.6 The Requesting Licensee shall provide the transmission link to implement the Dedicated Leased Connection in accordance to OpenNet's specifications at its own cost.

IDA's Directed Modifications: The industry commented that OpenNet should set out the applicable specifications upfront and that it could not be allowed to impose specifications thereby creating artificial barriers in relation to the implementation of transmission links. IDA understands that the specifications mentioned in the clause are captured in Annex 14B of Schedule 14. For clarity, OpenNet should clarify the above in the clause. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 5.6 to clarify that the specifications stated in the clause refer to the specifications captured in Annex 14B of Schedule 14.

5.7 To avoid firewall incompatibility and inter-operation issues, the Requesting Licensee shall agree to install and use only firewall and communication software certified by OpenNet or OpenNet appointed supplier(s) to interconnect with OpenNet Platform. Please refer to Annex 14B.

- 5.8 The Requesting Licensee will appoint a single point of contact (“SPOC”) to liaise with OpenNet to provide necessary network information, agree on schedule, resolve interconnection problems, testing, commission and other related activities.
- 5.9 The Requesting Licensee shall appoint a user administrator to maintain the Requesting Licensee’s user accounts & access rights. The Requesting Licensee administrator will manage the Requesting Licensee user accounts subscribed by the Requesting Licensee using the administrative functions in the Service Portal by a privileged user for each Requesting Licensees. .
- 5.10 OpenNet will provide and expose sets of open system APIs for Requesting Licensees to integrate and interface with OpenNet Platform to support Requesting Licensee’s flow-through of business transactions and related operations. OpenNet will support Requesting Licensee to setup and test their system interfaces with the APIs offered by OpenNet Platform pursuant to the terms and conditions of OSS/BSS Professional Services.

IDA’s Directed Modifications: IDA refers to our earlier directed modifications in relation to the Scope of Professional Service and Simplified Process for Professional Service. IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to Clause 5.10 to align it with the Scope of Professional Service and Simplified Process for Professional Service.

- 5.11 OpenNet shall not be responsible for any issues that may arise from Requesting Licensee’s software which interfaces with OpenNet Platform’s open system APIs. Requesting Licensee may request OpenNet to assist in investigating its software problems pursuant to the terms and conditions of OSS/BSS Professional Services, and the man-day(s) effort incurred shall be chargeable as negotiated and agreed by both OpenNet and Requesting Licensee pursuant to the provision of OSS/BSS Professional Services.

IDA’s Directed Modifications: The industry commented that the applicable terms and conditions of OSS/BSS Professional Services referred to in Clause 5.11 were not clear. IDA agrees that there is merit in OpenNet clarifying them. Accordingly, IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to Clause 5.11 to clarify

the terms and conditions of the OSS/BSS Professional Services that would be applicable.

Separately, the industry commented that the particular clause should be subject to an exception that would hold OpenNet liable in circumstances where acts or omissions by OpenNet caused or contributed to any issues experienced by the RLs. The industry further commented that it would similarly not be appropriate for these charges to be payable where the need for such testing was attributable to the activities of OpenNet itself (e.g., due to changes in OpenNet APIs or new APIs being introduced by OpenNet). IDA agrees that it is reasonable for OpenNet to be responsible in circumstances where acts or omissions by OpenNet cause or contribute to any issues experienced by the RLs. With respect to the issue of responsibility for costs arising from changes to the OpenNet Platform, IDA has already stated its position on the matter under the Change Management Process. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 5.11 to: (a) clarify that OpenNet will be responsible in circumstances where acts or omissions by OpenNet cause or contribute to any issues experienced by the RLs; and (b) align the cost bearing responsibility with the position stated in the Change Management Process.

5.12 The Requesting Licensee shall submit its **OSS/BSS Connection** Request using the **OSS/BSS Connection** Request Form in the form of Annex 14A containing but not limited to the following information:

- (a) Required mode of Access
- (b) the Requesting Licensee's contact details.
- (c) the services that the Requesting Licensee wishes to undertake.
- (d) any other useful information which the Requesting Licensee believes would be useful to OpenNet in assessing the Requesting Licensee's request.

- (e) Within five (5) Business Days from the Connection Request Date, OpenNet will notify Requesting Licensee with a unique reference number or a similar form of identification in the notification) if its Request is accepted.

5.13 Within five (5) Business Day from the Connection Request Date, OpenNet must 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:

IDA's Directed Modifications: IDA notes a typographical error in the clause. Accordingly, IDA directs OpenNet to replace "Day" with "Days" after "five (5) Business" in Clause 5.13.

- (a) the OSS/BSS Connection Request is not in the prescribed form;
- (b) the OSS/BSS Connection Request does not contain the required information or the information provided is inaccurate or misleading;
- (c) the hardware resources are not available or user account limit has been reached;

IDA's Directed Modifications: IDA refers to paragraph 18 of the Explanatory Memorandum. IDA directs OpenNet to remove the phrase "or user account limit has been reached" from Clause 5.13(c).

- (d) the provision of the OSS/BSS connection will give rise to significant technical or engineering issues;

IDA's Directed Modifications: IDA refers to paragraph 19 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 5.13(d) to clarify that in the situation where an RL requests the Standard Connectivity Service and the RL complies with OpenNet's requirements (e.g., using the type of firewall stated by OpenNet), this should not give rise to any significant technical or engineering issues. If there are issues arising from the above situation, the responsibility is on OpenNet to work with the RL to resolve these issues.

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

Where OpenNet rejects the OSS/BSS Connect Request, OpenNet must provide reasons explaining the basis for rejection.

IDA's Directed Modifications: IDA refers to paragraph 20 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 5.13 to allow RLs to submit orders for OpenNet's Mandated Services via fax or email where OpenNet rejects such RL's request for OSS/BSS Connection Service due to 5.13(c) or 5.13(d).

5.14 Where OpenNet is unable to offer the **OSS/BSS Connection** due to unavailability, OpenNet shall take reasonable measures to cater for additional resources where possible. The Requesting Licensee will be informed of the delivery date. Where the user account limit has been reached, Requesting Licensee may take up OSS/BSS Professional Services to provide for additional accounts.

IDA's Directed Modifications: IDA refers to paragraph 18 of the Explanatory Memorandum. IDA directs OpenNet to remove the sentence "Where the user account limit has been reached, Requesting Licensee may take up OSS/BSS Professional Services to provide for additional accounts" from Clause 5.14.

IDA refers to paragraphs 22 and 23 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 5.14 to: (a) clarify that the unavailability of OSS/BSS Connection is limited to the rejection of OSS/BSS Connection because of hardware unavailability under Clause 5.13(c); (b) clarify that OpenNet shall take all reasonable measures to cater for additional resources to address the unavailability; and (c) include a reasonable timeframe for OpenNet to notify RLs of the availability date.

6. VALUE-ADDED SERVICE: OSS/BSS PROFESSIONAL SERVICES (OBPS)

IDA's Directed Modifications: IDA refers to our earlier directed modifications in relation to the Scope of Professional Service. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 6 to clarify the Scope of Professional Service.

- 6.1 The Requesting Licensee may request some customization to cater to his business requirement. Such customization requests are outside of the standard services offered by OpenNet. Requesting Licensee shall provide OpenNet with detailed technical specification of his requirements.
- 6.2 The Requesting Licensee may request for customisation of API(s). OpenNet shall evaluate the Requesting Licensee request on a case-by-case basis pursuant to the terms and conditions of OSS/BSS Professional Services. For the avoidance of doubt, OpenNet shall be entitled to reject the Requesting Licensee's request.
- 6.3 OpenNet shall provide customised OSS/BSS Professional Services (**Customised Services**) to the Requesting Licensee to integrate and interface its systems with the OpenNet Platform under this Clause 6. The Customised Services include the following services:
- (a) Setup, support and use of OpenNet's test environment. OpenNet will configure a testing environment for testing the customised interface;
 - (b) Consultation for system integration and interfacing using OpenNet Platform APIs.
 - (c) Customisation of OpenNet APIs for system integration and interfaces. OpenNet will provide the basic support for the customisation on the interface. OpenNet will provide assistance for troubleshooting on the customised interface in OpenNet Platform
- 6.4 Where the Requesting Licensee requests to test any new or enhanced system functionalities, OpenNet will setup a platform test environment at Requesting Licensee's costs, which both OpenNet and the Requesting Licensee shall test before they are promoted into the OpenNet and Requesting Licensees production environment. This shall be a standard operation procedure to be followed by the Requesting Licensee to minimise the risks of deficient software functions causing disruptions to the NBN supply chain operation.

IDA's Directed Modifications: IDA refers to our earlier directed modifications in relation to the Change Management Process. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 6.4 to align it with the Change Management Process.

7. ORDERING OF OSS/BSS PROFESSIONAL SERVICES

IDA's Directed Modifications: IDA refers to our earlier directed modifications in relation to the Scope of Professional Service. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 7 to clarify the Scope of Professional Service.

IDA refers to our earlier directed modifications in relation to the Simplified Process for Professional Service. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 7 to align it with the Simplified Process for Professional Service.

(a) Ordering of OBPS

7.1 The Requesting Licensee shall submit its **OSS/BSS Professional Service** Request using **OSS/BSS Professional Service** Request Form in the form of Annex 14A including the detail document of **the technical requirement**. The Request Form and technical requirement document must be sent to an email account designated by OpenNet.

7.2 Within five (5) Business Day of the date on which OpenNet receives the OSS/BSS Professional Service Request ("**Service Request Date**") and subject to clause 5.1 and 5.2, OpenNet must 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 OSS/BSS Professional Service Request is not in the prescribed form;
- (b) the Requesting Licensee has committed a material breach of the ICO Agreement or this Schedule.

7.3 Within fifteen (15) Business Days from the Service Request Date and subject to clause 5.1 and 5.2, OpenNet must 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 it's Request is rejected, for any one of the following reasons:

- (a) the Requesting licensee has not taken up the standard services for Connectivity via B2B Web Services;
- (b) the OSS/BSS Professional Service Request and additional requirement does not contain the sufficient information or the information provided is inaccurate or misleading;
- (c) the hardware resources are not available;
- (d) the provision of the OSS/BSS Professional Service will give rise to significant technical or engineering issues;

IDA's Directed Modifications: IDA refers to paragraph 19 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 7.3(d) to clarify that in the situation where an RL requests the Standard Connectivity Service and the RL complies with OpenNet's requirements (e.g., using the type of firewall stated by OpenNet) and the RL consequently orders OpenNet's Professional Service, this should not give rise to any significant technical or engineering issues. If there are issues arising from the above situation, the responsibility is on OpenNet to work with the RL to resolve these issues.

IDA refers to paragraph 20 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 7.3 to allow an RL to submit orders for OpenNet's Mandated Services via fax and email where the RL's request for OpenNet's Professional Service has been rejected under Clause 7.3(c) or 7.3(d) thereby resulting in the RL's inability to connect to the OpenNet Platform.

IDA refers to paragraph 24 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA's approval, a new clause to address how OpenNet would handle the rejection of Professional Service due to the unavailability of hardware resources (i.e., OpenNet shall take all reasonable measures to cater for additional resources to address the unavailability and include a reasonable timeframe for OpenNet to notify RLs of the availability date).

(b) **Project Study**

7.4 OpenNet will provide a Project Study quotation within fifteen (15) Business Days upon receiving the Requesting Licensee's OSS/BSS Professional Service Request and the associated technical specification and requirement. A pre-Project Study assessment will be conducted to evaluate the Requesting Licensee's requirements and estimate the lead-time required for the Project Study. OpenNet will provide the Requesting Licensee with the estimated schedule and estimated Charges for Project Study, as a result of the pre-Project Study.

IDA's Directed Modifications: The industry has questioned the need for multiple layers of processes (in particular the need for a pre-Project Study). The industry also commented that the schedule to complete the Project Study and Charges to be imposed to perform the Project Study should be fixed. IDA understands that the purpose of the pre-Project Study is to provide an RL with an estimate of the timeframe needed by OpenNet to perform the necessary Project Study, which translates to the cost that OpenNet would subsequently recover from the RL in terms of man-day charges. As the pre-Project Study does not carry any charge and considering that the outcome of the pre-Project Study will provide the RL with the cost that it would incur for the Project Study, IDA is of the view that there is merit in retaining the existing process. Notwithstanding this, IDA agrees with the industry that the quotation for the Project Study, in terms of schedule and cost, should be binding so that the RL will be provided with certainty. Considering that it is within OpenNet's ability to secure such a binding quotation, IDA is of the view that it is reasonable for OpenNet to comply with the above obligation. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the

necessary modifications to clause 7.4 such that it will provide its RL with a binding quotation in terms of the schedule and Charges for the Project Study. For the avoidance of doubt, the above should be considered as a separate process from the Simplified Process for Professional Service.

7.5 Within fifteen (15) Business Days (or such other time as may be agreed between the Parties) from the date of notification of the result of the pre-Project Study assessment under clause 7.4, the Requesting Licensee shall confirm in writing whether it wishes to proceed with OSS/BSS Professional Service and whether it agrees to pay the estimated Charges for the Project Study.

IDA's Directed Modifications: IDA refers to our earlier directed modifications in relation to Clause 7.4. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 7.5 to align it with the above.

7.6 Except where OpenNet has rejected an **OSS/BSS Connection** Request under clauses 7.2 and 7.3, and the Requesting Licensee has chosen to only acquire Service Portal GUI access only, OpenNet will commence on a Project Study. The Requesting Licensee must pay the Project Study Fee specified in the Project Study quotation under 7.4.

IDA's Directed Modifications: IDA notes that Clause 7.6 should also take into account the scenario where an RL decides not to proceed with the Project Study after the pre-Project Study phase. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 7.6 to incorporate the above scenario.

7.7 OpenNet shall use its reasonable endeavours to complete the Project Study within the estimated timeframe and charges. If OpenNet's costs increase above OpenNet's estimate set out in the notice under clause 7.5 (as may be varied from time to time under this clause 7.7), OpenNet shall provide the Requesting Licensee with a revised price estimate. OpenNet must obtain the prior approval of the Requesting Licensee to the revised price estimate and if the Requesting Licensee does not provide its approval, then, OpenNet may suspend the Project Study until the Requesting Licensee agrees to the revised price estimate.

7.8 OpenNet shall inform Requesting Licensee for any changes on the schedule provided and provide the revised schedule.

7.9 Requesting Licensee will have to agree and endorse on the revised schedule before OpenNet proceeds with further work

IDA's Directed Modifications: IDA refers to our earlier directed modifications in relation to Clause 7.4. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 7.7, Clause 7.8 and Clause 7.9 to align them with the directed modifications in relation to Clause 7.4.

7.10 In the event that the Requesting Licensee cancels the Request before the Project Study is completed, the Requesting Licensee shall be liable to cancellation charges which shall be based on the amount of work done and any other incidental costs and/or expenses which are reasonably incurred by OpenNet in connection with the evaluation of the cancelled Request (to be recovered on a cost-oriented basis).

IDA's Directed Modifications: IDA refers to our directed modifications to Clauses 14.2 and 14.3.1 in Schedule 15. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 7.10 to clarify the charges that it would recover from the RL.

7.11 The Project Study will define the project scope of work (“SOW”) including deliverables, acceptance and timeline schedule, assess software, hardware and subject matter expert requirements.

7.12 OpenNet and the Requesting Licensee shall jointly define the SOW and the terms and conditions (“T&Cs”) which shall include, but not be limited to, the following:

- (a) Key project assumptions.
- (b) OpenNet responsibilities.
- (c) Requesting Licensee responsibilities.
- (d) OpenNet deliverables.

- (e) Acceptance of deliverables.
- (f) Change requests management
- (g) Project schedule
- (h) Payment terms

7.13 Following completion of the Project Study, OpenNet shall provide the Requesting Licensee with the following information ascertained as a result of the Project Study:

- (a) SOW
- (b) T&Cs
- (c) Functional specification of the enhanced interface (where applicable)
- (d) Implementation plan
- (e) the estimated Charges for the OSS/BSS Professional Services (including a breakdown of the major components of the Charges) and an outline of the major elements of the OSS/BSS Professional Services to be undertaken by OpenNet; and
- (f) provide an estimation of project man-day(s) required to complete the OSS/BSS Professional Services.

OpenNet shall be entitled to levy and receive the Project Study Fee provided in Schedule 15 (Charges) irrespective of whether the Requesting Licensee proceeds with the **OSS/BSS Connection** Request immediately after completion of the Project Study

8. IMPLEMENTATION OF OSS/BSS PROFESSIONAL SERVICES

IDA's Directed Modifications: IDA refers to our earlier directed modifications in relation to the Scope of Professional Service. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 8 to clarify the Scope of Professional Service.

IDA refers to our earlier directed modifications in relation to the Simplified Process for Professional Service. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 8 to align it with the Simplified Process for Professional Service.

- 8.1 Within fifteen (15) Business Days (or such other time as may be agreed between the Parties) from the date of notification of the result of the Project Study under clause 7.13, the Requesting Licensee shall confirm in writing whether it wishes to proceed with OSS/BSS Professional Service and whether it agrees to pay the estimated Charges for the OSS/BSS Professional Services work.
- 8.2 OpenNet shall use its reasonable endeavours to provide OSS/BSS Professional Services within the estimated charges and timeframe and in accordance to the agreed project SOW and T&Cs.
- 8.3 OpenNet shall use its reasonable endeavours to complete the OSS/BSS Professional Services Work within the estimated charges. If OpenNet's costs increase above OpenNet's estimate set out in the notice under clause 7.13 (as may be varied from time to time under this clause 8.3), OpenNet shall provide the Requesting Licensee with a revised price estimate. OpenNet must obtain the prior approval of the Requesting Licensee to the revised price estimate and if the Requesting Licensee does not provide its approval, then, OpenNet may suspend the OSS/BSS Professional Services Work until the Requesting Licensee agrees to the revised price estimate.
- 8.4 OpenNet shall complete any implementation within a timeframe stated in the quotation under clause 7.13. Subject to delays that may result from suspension of the work under clause 8.3, if OpenNet is not able to complete the work within the timeframe under this clause 8.4, OpenNet shall inform the Requesting Licensee of when the work will be completed.
- 8.5 OpenNet will assist in conducting the testing with Requesting Licensee according to the agreed schedule.
- 8.6 Prior to commencing testing, the Requesting Licensee must submit detailed testing plans and testing timetables no less than fifteen (15) Business Days before commencement of works for OpenNet's approval (or such other time as may be

agreed between the Parties). The Requesting Licensee shall not commence testing until it has received OpenNet's approval in writing.

IDA's Directed Modifications: The industry commented that Clause 8.6 ought to be amended such that OpenNet's approval must not be unreasonably withheld or delayed. IDA agrees that the amendment suggested by the industry is reasonable. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 8.6 to provide that its approval of testing plans and timetables must not be unreasonably withheld or delayed.

8.7 Requesting Licensee shall inform OpenNet on the actual date of deployment to production.

IDA's Directed Modifications: The industry submitted that Clause 8.7 should be modified to include a commitment by OpenNet to support the deployment to production upon the RL's notification. IDA agrees that the above requirement is reasonable as OpenNet's Professional Service must necessarily include the required support by OpenNet. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 8.7 to clarify that OpenNet will support the RL's deployment to production.

8.8 Within three (3) Business Day after the completion of the OSS/BSS Professional Services, OpenNet will notify the Requesting Licensee and request the Requesting Licensee for a final acceptance of the OSS/BSS Professional Services.

8.9 OpenNet will provide the support for OSS/BSS Professional Services for a period of one (1) month from the date of final acceptance.

IDA's Directed Modifications: The industry commented that a one (1) month support period for OSS/BSS Professional Services was too short for the RL to indentify bugs/defects and proposed that any such support period should be no shorter than six (6) months. IDA understands that, during the support period, OpenNet will be responsible for resolving any issues without any cost incurred to the RL. After the support period,

OpenNet will continue to rectify any faults, but if the fault is with the RL, OpenNet will charge the RL according to the man-day charge under Schedule 15 for the man-day(s) spent in investigation. While IDA agrees with the industry that a one (1) month period may be too short to identify bugs/defects, IDA is also of the view that a six (6) month period may be excessive. On balance, IDA is of the view that a three (3) month support period would be more reasonable. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 8.9 to extend the support period from one (1) month to three (3) months.

8.10 In the event that the Requesting Licensee decides to cancel its Request before the work is completed but after its acceptance of the agreement to pay the Professional Service Charge, the Requesting Licensee shall be liable to cancellation charges which shall include the work completed so far and any other incidental costs and/or expenses which are reasonably incurred by OpenNet in connection with the cancelled Request (to be recovered on a cost-oriented basis).

IDA's Directed Modifications: IDA refers to our directed modifications to Clauses 14.2 and 14.3.1 in Schedule 15. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 8.10 to clarify the charges that it would recover from the RL.

8.11 The Requesting Licensee shall pay for all software, hardware and subject matter experts and any other costs incurred for the project as stated in the project SOW and T&Cs.

IDA's Directed Modifications: The industry submitted that the above costs should be stated in the Project Study and calculated in accordance with Schedule 15. IDA agrees that there is no reason why OpenNet would not be able to provide such costs during the Project Study stage. In addition, IDA also agrees that OpenNet should provide further clarity on how such costs would be linked to the charges in Schedule 15. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 8.11 to clarify the above.

9. FAULT REPORTING AND CLEARING

9.1 The Requesting Licensee acknowledges that it is technically impracticable to provide fault free access to and use of the OpenNet Platform and OpenNet does not undertake to do so. The Requesting Licensee acknowledges that it may experience, and OpenNet shall not be liable for, disruption to the OpenNet Platform. The Requesting Licensee shall resubmit to OpenNet service requests affected by any system downtime of the OpenNet Platform.

IDA's Directed Modifications: One respondent commented that OpenNet must be liable for disruptions to OpenNet's Platform if the disruptions are caused by the fault or equipment of OpenNet or its suppliers. IDA is of the view that the above is reasonable as it is well within OpenNet's control to ensure that it itself and/or its suppliers do not cause such disruptions. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 9.1 to clarify that OpenNet shall be liable if the disruption to OpenNet's Platform is attributable to OpenNet and/or its suppliers.

9.2 The Requesting Licensee shall call, email or fax to OpenNet to report problem related to OpenNet Platform with details including the Requesting Licensee's name, contact, nature of problems, problem description, application function etc. OpenNet shall respond by issuing an incident reference number to the Requesting Licensee for follow up.

9.3 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 OSS/BSS Connection Equipment before reporting the fault to OpenNet.

9.4 Upon receipt of a fault report from the Requesting Licensee under clause 9.2, 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.

9.5 If, following investigation, OpenNet determines that the fault is within the OpenNet Platform, OpenNet shall use reasonable efforts to rectify the fault.

IDA’s Directed Modifications: The industry submitted, and IDA agrees, that the obligation on OpenNet to rectify a fault which is within the OpenNet Platform should be absolute and not be merely based on “reasonable efforts”. As the fault resides in the OpenNet Platform, the responsibility should be fully on OpenNet to rectify the fault. Considering that OpenNet has committed that it will rectify faults which are within its network without any qualification for the other Mandated Services in its ICO, IDA agrees that it is reasonable for OpenNet to similarly do so for faults within the OpenNet Platform. Accordingly, IDA directs OpenNet to remove the qualification of “reasonable efforts” from Clause 9.5.

9.6 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).

9.7 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.

9.8 The OSS/BSS Connection is deemed to be restored when OpenNet has tested and notified to the Requesting Licensee that the OSS/BSS Connection has been restored.

IDA’s Directed Modifications: The industry commented that OpenNet should provide confirmation, and not just notification, to RLs when the OSS/BSS Connection has been restored. Considering that OpenNet will provide confirmation to its RLs when faults have been restored for the other Mandated Services in its ICO, IDA agrees that it is reasonable for OpenNet to similarly do so for faults relating to the OSS/BSS Connection. Accordingly, IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to Clause 9.8 to clarify that it will

provide confirmation to the RL whenever a fault on the OSS/BSS Connection has been restored.

9.9 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 OSS/BSS 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).

IDA's Directed Modifications: IDA understands that OpenNet does not foresee a need for a joint investigation process for this schedule. Accordingly, IDA directs OpenNet to delete Clause 9.9 in its entirety from Schedule 14.

9.10 The Requesting Licensee acknowledges that OpenNet may temporarily disconnect the Requesting Licensee's OSS/BSS Connection to perform reasonable fault analysis and line testing on the OSS/BSS Connection. OpenNet shall conduct such disconnection 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.

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

9.12 Where the fault lies within the OpenNet Platform, OpenNet shall evaluate the severity level of the problem reported and respond accordingly. See "Timeframe" section below for response times.

9.13 OpenNet shall resolve the reported problem based on a mutually agreed timeline between OpenNet and the Requesting Licensee.

9.14 In the event the Requesting Licensee and OpenNet connection(s) at the Requesting Licensee's end is faulty, the Requesting Licensee may request OpenNet to setup and configure Express Firewall Setup (for Emergency Public Internet secured VPN access) from its alternative Firewall at different location. Such request shall be subject to following terms and conditions:

- (a) The Requesting Licensee shall pay the Express Firewall Setup charge as stated in Schedule 15 (Charges).
- (b) The Requesting Licensee shall provide its own internet connection from its alternative firewall premises or work site at its own cost.
- (c) The Requesting Licensee shall liaise with OpenNet to set up and configure OpenNet firewall to allow the emergency public Internet secured VPN access from the Requesting Licensee's alternative access sites.
- (d) The Requesting Licensee shall inform and liaise with OpenNet to cease the emergency public Internet secured VPN access when the alternative access to OpenNet Platform is no longer required.

9.15 OpenNet retains the right to suspend, modify, remove and/or to add to the OpenNet Platform in its sole discretion with immediate effect and without notice and OpenNet will not be liable for any such action.

IDA's Directed Modifications: IDA refers to our earlier directed modifications in relation to the Change Management Process. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 9.15 to align it with the Change Management Process.

IDA refers to paragraph 16 of the Explanatory Memorandum. IDA directs OpenNet to remove the treatment of liability from Clause 9.15.

9.16 Access to the OpenNet Platform may be suspended temporarily and without notice in circumstances of system failure, maintenance or repair or for reasons beyond the control of OpenNet.

IDA's Directed Modifications: One respondent submitted that OpenNet had not offered a process to provide reasonable notice prior to suspending RL's access to the OpenNet Platform in circumstances of system failure, maintenance or repair or for reasons beyond OpenNet's control. IDA agrees with the industry that OpenNet should provide prior notification to the RLs in cases where the access to the OpenNet's

Platform need to be suspended due to anticipated circumstances. In IDA's view, it is reasonable for such notification process to be the same as the scheduled maintenance notification process. However, IDA is of the view that it may not be possible for OpenNet to provide prior notification in unanticipated circumstances or for reasons beyond OpenNet's control. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 9.16 to: (a) include a process to provide prior notification to RLs if there is a need to suspend access to OpenNet's Platform due to anticipated events. Such a process should be consistent with the revised scheduled maintenance notification process as required under the directed modifications to Clause 10.4; and (b) qualify that OpenNet will only suspend access to OpenNet's Platform without providing prior notification to RLs for circumstances beyond the control of OpenNet.

9.17 Where the OpenNet Platform is unavailable, OpenNet shall use its reasonable endeavours to notify the Requesting Licensee and accept requests for Mandated Services from the Requesting Licensee via a dedicated email address and fax number.

IDA's Directed Modifications: A respondent commented that the qualification to use only "reasonable endeavours" should be removed. IDA agrees that there is no reason for such a qualification as it relates to notifying RLs of the unavailability of the OpenNet Platform. In IDA's view, when OpenNet discovers that the OpenNet Platform is unavailable or when the same is brought to its attention, OpenNet's obligation to notify its RL of such unavailability shall be without qualification. In addition, IDA is also of the view that OpenNet should notify its RLs on OpenNet Platform's unavailability, when OpenNet discovers it or when the same is brought to its attention, without undue delay. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 9.17 to incorporate the above.

IDA refers to our earlier directed modifications in relation to the requirement to allow requests to be submitted via the OpenNet Platform

as well as the Manual Ordering Process. IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to Clause 9.17 to align it with the above.

9.18 Service level guarantees are not provided under this Schedule.

9.19 OpenNet shall use its reasonable endeavours to respond to the Request Licensee in respect of the following:

| Timeframe | Severity Level | Response Time |
|-----------|---|-----------------------------|
| | Severity Level 1 – System and users are unable to do production works or critical business processes (in crisis mode). | Immediate. |
| | Severity Level 2 – A key system function is not usable but the system is able to continue operation. | Within 2 hours. |
| | Severity Level 3 – A feature or function is faulty but does not seriously impact operation. | Within 24 hours. |
| | Severity Level 4 – A feature or function having a minor fault (e.g. Cosmetic problems) but does not impact operation or others issues that do not require immediate action. | Within 2 days or as agreed. |

10. OTHER TERMS & CONDITIONS

10.1 All new, modified or upgraded Requesting Licensee software system interfaces must be tested in the OpenNet Platform test environment before being promoted to the live production environment. In the event the Requesting Licensee does not comply with such procedure and such untested software system causes any interruption or damage to the OpenNet Platform, the Requesting Licensee shall be liable to pay Professional Services charges for man-day(s) effort incurred to recover system and data to resume normal operation.

10.2 The Requesting Licensee shall work with OpenNet to support testing of OpenNet-initiated OpenNet Platform API software changes including but not limited to implementation of new, modified and upgraded API(s).

IDA's Directed Modifications: IDA refers to our earlier directed modifications in relation to the Change Management Process. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 10.2 to align it with the Change Management Process.

10.3 OpenNet Platform will be available daily from 8am to 11pm with the exception of fault reporting functionalities, which will be operational 24 hours daily excluding specific scheduled maintenance periods. The daily maintenance of the OpenNet Platform shall be between 11pm and 8am of the next day, unless otherwise agreed.

10.4 For scheduled maintenance activity with duration beyond 24 hours, OpenNet shall inform the Requesting Licensee one (1) month in advance.

IDA's Directed Modification: The industry is of the view that OpenNet has not offered a process whereby it would provide reasonable notice and estimated downtime for all instances where the OpenNet Platform is unavailable. Considering that scheduled maintenance is planned in advance, IDA agrees with the industry that it is reasonable to require OpenNet to provide sufficient details and lead time to allow RLs to prepare themselves when the OpenNet Platform would be unavailable due to such maintenance. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 10.4 to: (a) notify RLs one (1) month in advance of all scheduled maintenance (regardless of the duration of such scheduled maintenance); and (b) include the details (e.g., date and duration of maintenance, type of maintenance and affected modules, functions and features of the OpenNet Platform) in its notification to the RLs.

10.5 OpenNet retains the right to terminate, vary or suspend the Requesting Licensee's named user accounts and take whatever action it considers appropriate should the Requesting Licensee breach any terms of the ICO Agreement.

IDA's Directed Modifications: The industry commented that an RL must have committed a material breach, and not merely any breach of the ICO Agreement, before OpenNet can trigger any termination or suspension of the RL's named user accounts. The respondent also commented that there was no reason for OpenNet to vary any user accounts. IDA understands that OpenNet's intention for the proposed clause is to cater to situations, which may not constitute a material breach of the ICO Agreement, where OpenNet will have to act immediately to protect the integrity of the OpenNet Platform so as to continuously support the operations of OpenNet and other RLs. While IDA agrees that OpenNet's concern may be valid, IDA also agrees with the industry that the drafting of the current clause is too broad and it gives OpenNet very wide discretion. In IDA's view, a more balanced approach would be for OpenNet to have the right to terminate or suspend user accounts upon a material breach of the ICO by the RL as well as in the limited situations where it is necessary for OpenNet to protect the integrity of the OpenNet Platform arising from the conduct of the RL. IDA also agrees that there is no need for OpenNet to vary any user accounts as OpenNet already has the ability to suspend or terminate the user accounts. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 10.5 to clarify that OpenNet will only have the right to terminate or suspend an RL's named user accounts: (a) if the RL has committed a material breach of the ICO Agreement; or (b) if there is a need to protect the integrity of the OpenNet Platform arising from the conduct of the RL.

10.6 OpenNet shall use its reasonable endeavours to ensure that the information provided on the OpenNet Platform is correct. However, OpenNet makes no representations or warranties as to the accuracy of the information on the OpenNet Platform and OpenNet shall not be liable to the Requesting Licensee in respect of the information provided on the OpenNet Platform.

IDA's Directed Modifications: The industry commented that the clause should be deleted in view of OpenNet's Mandated Services Information ("MSI") obligation. IDA agrees, as OpenNet is obligated under the Code

to provide accurate MSI to its RLs. Accordingly, IDA directs OpenNet to remove Clause 10.6 in its entirety from Schedule 14.

10.7 All Charges are for work done by OpenNet on Business Days unless stated otherwise.

11. TERM OF LICENCE

11.1 The term of an OSS/BSS Connection licence granted under this Schedule shall commence on the date of completion of the **OSS/BSS Professional Services (“Commencement Date”)** and continues for the term of either one (1) year (**“Term”**), or until the earlier occurrence of any of the following events:

- (a) either Party terminates the OSS/BSS Connection Service in accordance with Clause 13 of this Schedule;
- (b) the OpenNet ICO is revoked by the Authority under clause 12.8 of the ICO Agreement; or
- (c) the Authority removes the requirement for OpenNet to provide OSS/BSS Connection Service under the OpenNet ICO or exempts OpenNet from providing OSS/BSS Connection Service under clause 12.9 of the ICO Agreement.

IDA’s Directed Modifications: IDA refers to our earlier directed modifications in relation to the Scope of Professional Service. IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to Clause 11.1 to clarify the Scope of Professional Service.

11.2 OpenNet shall, three (3) months before the end of the Term, send a first reminder to the Requesting Licensee notifying it of the impending expiry of OSS/BSS Connection Service licence. If the Requesting Licensee does not respond to the first reminder, OpenNet shall, two (2) months before the end of the Initial Term, send a second reminder to the Requesting Licensee. If the Requesting Licensee does not respond to the first and second reminders, OpenNet shall, one (1) month before the end of the Initial Term, send a third reminder to the Requesting Licensee. If OpenNet does not receive a response from the Requesting Licensee at least three (3) weeks before the end of the Initial Term that it does not wish to extend the OSS/BSS Connection Service licence, then in this event, the OSS/BSS Connection Service licence shall be

deemed to be extended for another term of one (1) year on the same terms and conditions.

IDA's Directed Modifications: IDA notes that the contract will be automatically renewed yearly under Clause 13.1. It is therefore inconsistent with the process captured in Clause 11.2. Accordingly, IDA directs OpenNet to remove the Clause 11.2 in its entirety from Schedule 14.

12. SUSPENSION OF LICENCE

12.1 OpenNet may suspend the Requesting Licensee's OSS/BSS Connection Service licence at any time until further notice to the Requesting Licensee if the **OSS/BSS 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.

12.2 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 access to **OSS/BSS Connection** under this clause 12.

13. TERMINATION OF LICENCE

13.1 The minimum contract term shall be for one year and automatically renewed yearly ("**Term**"), unless terminated pursuant to the prevailing agreement.

13.2 If any of the user accounts is inactive for more than two (2) months, OpenNet shall be entitled to recover the inactive user account upon giving the Requesting Licensee ten (10) Business Days prior notice, and the Requesting Licensee did not dispute such written notice given by OpenNet.

IDA's Directed Modifications: One respondent commented that RLs may keep a pool of user accounts to ensure that they were available when required and thus suggested that clause 13.2 created unnecessary administrative work for the RLs. IDA understands that the pool of user accounts are resources tied to the OpenNet Platform. In this regard, it

does not seem unreasonable if OpenNet wants to recover the user accounts if they are not in use. However, IDA is of the view that OpenNet’s proposed period of two (2) months is too short. In IDA’s view, it would be more appropriate to align the above timeframe with the six (6) month timeframe (captured in the Code) which is given to the RL to use or activate its Basic Mandated Services. Accordingly, IDA directs OpenNet to propose, for IDA’s approval, the necessary modifications to Clause 13.2 to extend the timeframe from two (2) months to six (6) months.

13.3 At any time after the minimum contract term, OpenNet or the Requesting Licensee may terminate the OSS/BSS Connection Service by giving the other party not less than one month prior notice.

13.4 If the Requesting Licensee desires to terminate the OSS/BSS Connection Service before the end of a Term, the Requesting Licensee shall (i) give OpenNet at least one (1) month’s prior written notice.

13.5 OpenNet may terminate the licence of **OSS/BSS Connection** Service at any time with immediate effect by giving notice to the Requesting Licensee if the Requesting Licensee fails to complete the connection of its OSS/BSS platform within thirty (30) Business Days. If the Requesting Licensee’s failure to complete installation is attributable to circumstances beyond the Requesting Licensee’s reasonable control, OpenNet may grant a reasonable extension of time for installation to the Requesting Licensee at the Requesting Licensee’s request. A Requesting Licensee’s request under this clause must describe the circumstances beyond the Requesting Licensee’s control and such request must be received prior to the expiry of the aforementioned thirty (30) Business Days period. OpenNet shall respond to the Requesting Licensee’s request under this clause 9.1 within two (2) Business Days from the date of receipt of such request.

IDA’s Directed Modifications: One respondent commented that the phrase “complete the connection of its OSS/BSS platform” in Clause 13.5 was unclear. The respondent also commented that OpenNet should clarify the criteria that OpenNet would use to determine that an RL had failed to complete the connection of its OSS/BSS platform. IDA agrees that there is merit in OpenNet clarifying these. Accordingly, IDA directs

OpenNet to propose, for IDA’s approval, the necessary modifications to Clause 13.5 to clarify the phrase “complete the connection of its OSS/BSS platform” as well as the criteria that OpenNet will use to determine that the RL has failed to complete the connection of its OSS/BSS platform.

13.6 Either Party (**Terminating Party**) may terminate the licence of the OSS/BSS Connection Service:

- (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).

13.7 OpenNet may immediately terminate a licence of **OSS/BSS Connection Service** if:

- (a) in OpenNet’s reasonable opinion, the Requesting Licensee is using the OSS/BSS Connection Service in contravention of any applicable law, licence, code, regulation or direction and OpenNet has the necessary confirmation from the relevant Governmental Agencies that the Requesting Licensee is in contravention of the applicable law, licence, code, regulation or direction;
- (b) the Requesting Licensee’s OSS/BSS Connection Service licence has been suspended pursuant to clause 12.1 of this Schedule, and the Requesting Licensee fails to rectify the fault resulting in the suspension within a period of sixty (60) Calendar Days from the date of suspension;
- (c) the **OSS/BSS Connection Service** is used for a purpose other than for connecting to the OpenNet Platform to order services and report faults;
- (d) the **OSS/BSS Connection Service** has become unsafe or unfit for its purpose;

- (e) OpenNet's right to own, maintain or operate the OpenNet Platform is revoked or terminates or expires.

IDA's Directed Modifications: The industry commented that Clauses 13.7(d) and 13.7(e) ought to be deleted. The industry submitted that OpenNet was under an obligation to provide the OSS/BSS Connection Service which was fit for purpose and that such an obligation must not be contingent on OpenNet's ability to secure the necessary rights.

IDA understands that OpenNet's intention for the proposed Clause 13.7(d) is to cater to situations where OpenNet will have to act immediately to protect the integrity of the OpenNet Platform so as to continuously support the operations of OpenNet and other RLs arising from the conduct of the RL. An example is when an RL's system causes a denial of service attack on OpenNet's systems. IDA is of the view that the above is not unreasonable and agrees that there might be such instances when the OSS/BSS Connection Service has become unsafe or unfit for its purpose. However, IDA agrees that the current drafting of Clause 13.7(d) lacks clarity and there is merit in OpenNet further clarifying it. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 13.7(d) to clarify the above.

On the other hand, IDA is of the view that it is OpenNet's responsibility to secure and maintain its rights to own, maintain or operate the OpenNet Platform. In any case, IDA understands that there will be no circumstances where OpenNet's rights to own, maintain or operate the OpenNet Platform will be revoked, terminated or expired. Accordingly, IDA directs OpenNet to remove Clause 13.7(e) in its entirety from Schedule 14.

- 13.8 OpenNet may terminate the licence of OSS/BSS Connection Service on five (5) Business Days prior written notice, if the Requesting Licensee removes or abandons

its OSS/BSS Connection Service and the Requesting Licensee does not dispute such written notice by OpenNet.

IDA's Directed Modifications: One respondent commented that the phrase "removes or abandons its OSS/BSS Connection Service" in Clause 13.8 was unclear. The respondent also commented that OpenNet should clarify the criteria that OpenNet would use to determine that an RL had indeed removed or abandoned its OSS/BSS Connection Service. IDA agrees that there is merit in OpenNet clarifying these. Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 13.8 to clarify the phrase "removes or abandons its OSS/BSS Connection Service" and the criteria that OpenNet will use to determine that an RL has indeed removed or abandoned its OSS/BSS Connection Service.

13.9 If a Requesting Licensee's licence of an OSS/BSS Connection Service is to be terminated at any time during the Term because of the closure of an OpenNet OSS/BSS data centre, OpenNet must give the Requesting Licensee prior written notice at least three (3) months before the scheduled closure of such OpenNet OSS/BSS Data Centre. However, in the event of downtime of the OSS/BSS Connection Service due to system migration or relocation, OpenNet shall give the Requesting Licensee one (1) month's written notice before such system migration or relocation.

IDA's Directed Modifications: IDA refers to paragraphs 27 and 28 of the Explanatory Memorandum. IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 13.9 such that: (a) in the case of the closure of an OpenNet OSS/BSS data centre, OpenNet will take reasonable measures to minimise disruption to the RLs and use reasonable endeavours to provide assistance to the RLs on suitable alternatives; and (b) in the case of system migration or relocation where RLs are required to perform works to enable themselves to continue to connect to the OpenNet Platform (similar to the situation relating to the closure of OpenNet OSS/BSS data centre), OpenNet will provide at least three (3) months prior written notice before such migration or relocation, take reasonable measures to minimise disruption to the RLs and use

reasonable endeavours to provide assistance to the RLs on suitable alternatives.

13.10 Upon expiry or termination of the licence of OSS/BSS Connection Service:

- (a) the Requesting Licensee must discontinue the use of its OSS/BSS Connection Services and remove its OSS/BSS Connection from OpenNet's OSS/BSS data centre without undue delay;
- (b) OpenNet shall reinstate the OpenNet Platform and recover/reinstate all firewall settings and recover the reasonable cost of such reinstatement (other than the cost of removing the user accounts) from the Requesting Licensee, other than in circumstances where the Requesting Licensee's discontinuation of the use of the OpenNet Platform is a direct result of OpenNet's decommissioning of the OpenNet OSS/BSS data centre under this Schedule 14, or where the termination occurs as a result of OpenNet's fault; and

IDA's Directed Modifications: One respondent commented that the cost of reinstatement as mentioned in Clause 13.10(b) should not be imposed as the RL would already be liable for the Termination Charge as stated in Schedule 15. IDA understands that the cost of reinstatement mentioned in Clause 13.10(b) is the same as the "Termination Charge" as proposed under Clause 14 of Schedule 15. IDA also understands that there is no charge for the removal of user accounts. For clarity, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 13.10(b) to clarify the above.

- (c) the Requesting Licensee shall pay OpenNet the Charges for the OSS/BSS Connection Service for the remainder of the Term of the OSS/BSS Connection Service licence if the termination is the result of the Requesting Licensee's fault

IDA's Directed Modifications: IDA notes that there are no monthly recurring charges in OpenNet's OSS/BSS Connection Service for the Standard Connectivity Service. Hence, there will not be any outstanding charges for the remainder of the Term of the OSS/BSS Connection Service licence for the Standard Connectivity Service per se.

Accordingly, IDA directs OpenNet to propose, for IDA's approval, the necessary modifications to Clause 13.10(c) to clarify the above.

13.11 If the Requesting Licensee fails to discontinue the use of OpenNet Platform and remove its OSS/BSS Connection under clause 13.9(a), OpenNet may at its sole discretion remove and/or dispose of the Requesting Licensee's OSS/BSS Connection and reinstate the OSS/BSS Connection to its original condition. The Requesting Licensee shall pay to OpenNet all reasonable costs associated with the work undertaken by OpenNet including the cost of disposing the OSS/BSS Connection. In such event, the Requesting Licensee shall have no claim whatsoever against OpenNet related to or in connection with the work undertaken by OpenNet pursuant to this Clause 13.10.

IDA's Directed Modifications: IDA notes that the reference to Clause 13.9(a) is a typographical error and that the correct reference should be to Clause 13.10. Accordingly, IDA directs OpenNet to replace "Clause 13.9(a)" with "Clause 13.10" in Clause 13.11.

ANNEX 14A
OSS/BSS CONNECTION & PROFESSIONAL SERVICE

| REQUEST FOR OSS/BSS CONNECTION & PROFESSIONAL SERVICE | |
|--|---|
| Date of Application : _____ | Application Reference Number : _____ |
| <p>Request for OSS/BSS Mode of Access is sought for either or both connection :</p> <ol style="list-style-type: none"> 1. OpenNet Service Portal GUI: <ul style="list-style-type: none"> <input type="checkbox"/> Public Internet secured VPN Client Application Connection 2. B2B Web Services through open system API: <ul style="list-style-type: none"> <input type="checkbox"/> Internet via secure VPN <input type="checkbox"/> Dedicated Leased Connection | |
| <p>Request for OSS/BSS Professional Services</p> <ul style="list-style-type: none"> <input type="checkbox"/> Setup, support and use of OpenNet's test environment <input type="checkbox"/> Consultation for system integration and interfacing using OpenNet Platform APIs <input type="checkbox"/> Customisation of OpenNet APIs for system integration and interfaces <p style="text-align: right;">No of Attachment : _____</p> | |
| <p>Name : _____</p> <p>Designation : _____</p> <p>Contact Number : _____</p> <p>Fax Number : _____</p> <p>Signature : _____</p> | <p>Name of Requesting License : _____</p> <p style="text-align: center;">[Company Name]</p> <p>Company Stamp: _____</p> |
| <p>OpenNet</p> <p><input type="checkbox"/> Not Approved</p> <p><input type="checkbox"/> Approved</p> | <p>Reason for Rejection : _____</p> <p>OpenNet Reference Number: _____</p> |
| <p>OpenNet</p> <p>Sign : _____</p> <p>Name: _____</p> | <p>Contact Number : _____</p> <p>Fax Number : _____</p> |
| <p>OpenNet Endorsement</p> <p>Received Date : _____ Queue Status : _____ Processed Date: _____</p> | |

REQUEST FOR USER ACCOUNT

Date of Application : _____ Application Reference Number : _____

Requesting Licensee Information :

(select either one of option)

Organisation: _____

1st New User Account (ICO Registration No: _____)

New User Account Change Password Remove User Account

1st User Account Information:

Name: _____ Designation: _____

Contact Number: _____ Email: _____

Subsequent User Account Information:

Name: _____ Designation: _____

Contact Number: _____ Email: _____

Subsequent User Account Information:

Name: _____ Designation: _____

Contact Number: _____ Email: _____

Subsequent User Account Information:

Name: _____ Designation: _____

Contact Number: _____ Email: _____

Subsequent User Account Information:

Name: _____ Designation: _____

Contact Number: _____ Email: _____

Name : _____ Name of Requesting License : _____

Designation : _____ [Company Name]

Contact Number : _____

Fax Number : _____ Company Stamp: _____

Signature : _____

Application returned – incomplete/illegible

Not Approved Reason for Rejection: _____

Approved OpenNet Approval Code: _____

OpenNet

Received Date: _____ Queue Status: _____ Processed Date: _____

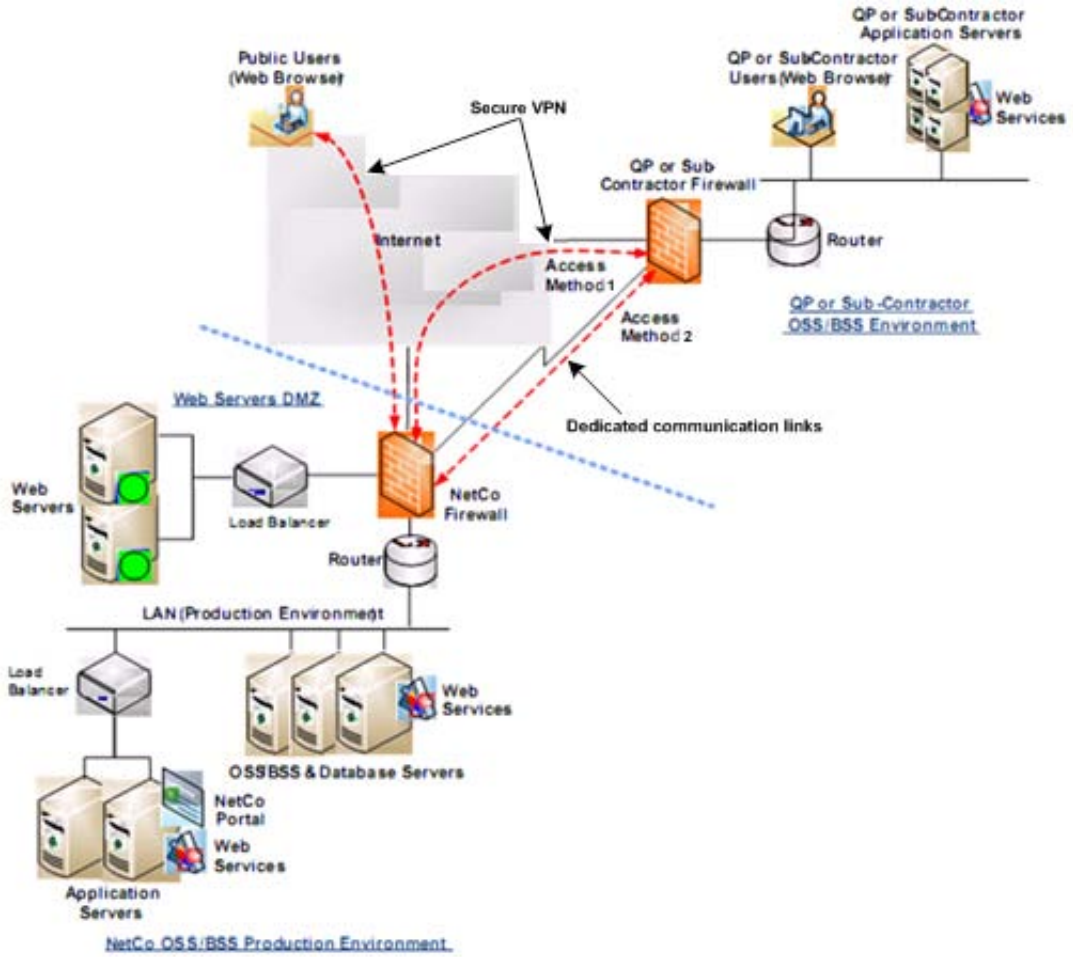
OpenNet Endorsement

Name: _____ Signature: _____ Date: _____

ANNEX 14B

TECHNICAL SPECIFICATIONS

I. CONNECTIVITY DIAGRAM



II. TYPES OF COMMUNICATION LINKS & SPECIFICATIONS

| Specification | OpenNet end | NetCo QP end |
|-------------------------------|--|--|
| Type of Links | 1) Dedicated, Secured VPN link – preferably fibre optic WAN link | 1) Dedicated, Secured VPN link – preferably fibre optic WAN link |
| | 2) Secured VPN via Internet links | 2) Secured VPN via Internet links |
| Bandwidth | 10 Mbps or higher | 10 Mbps or higher |
| Physical Connection | RJ45 | |
| Termination Details | Connect to NetCo QP or S/P Firewall | Connect to OpenNet Firewall |
| Protocol Support at WAN Links | Must Support TCP/IP | Must Support TCP/IP |
| Security details | Must support VPNs, Support of 3DES, IPSEC , ACL | Must support VPNs, Support of 3DES, IPSEC , ACL |
| Application Access Control | User authentication, authorisation, access control, OpenNet will govern the web services that could be consumed by segmenting user grouping and access list | User authentication, access control, Audit trail |

Table 4: Types of Communication Links and Specifications

III. LIST OF SUPPORTED FIREWALL AND VPN

This firewall supports both IPsec and Secure Socket Layer (SSL) VPN. Below are a list of firewalls which are interoperability with OpenNet's firewall.

- ZyXEL ZyWALL
- SonicWall
- WatchGuard Firebox II
- Netscreen-204
- Microsoft ISA 2004
- Checkpoint NGX
- Linksys BEFVP41
- Cisco PIX
- Juniper SSG
- YAMAHA RTX1200