

19 May 2011

Ms Aileen Chia
Deputy Director-General (Telecoms & Post)
Infocomm Development Authority of Singapore
10 Pasir Panjang Road
#14-01 Mapletree Business City
Singapore 117438

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(sent via email to ida_ilo@ida.gov.sg)

Dear Ms Chia

**INTERCONNECTION OFFER FOR THE PROVISION OF SERVICES ON THE NEXT GENERATION
NATIONWIDE BROADBAND NETWORK – NETWORK COMPANY**

- (I) PROPOSED MODIFICATIONS TO OPENNET'S OBLIGATION TO TEST OPTICAL PERFORMANCE
OF FIBRE CONNECTIONS**
- (II) PROPOSED OSS/BSS CONNECTION & PROFESSIONAL SERVICE**

Nucleus Connect is pleased to submit our feedback and comments on the above consultation paper for IDA's consideration.

Please feel free to contact the undersigned should IDA require any clarification on the points raised in our response.

Yours sincerely
For and on behalf of
Nucleus Connect Pte Ltd



Ronald Lim
Head (Regulatory)

INTERCONNECTION OFFER FOR THE PROVISION OF SERVICES ON THE NEXT GENERATION NATIONWIDE BROADBAND NETWORK – NETWORK COMPANY

- (I) PROPOSED MODIFICATIONS TO OPENNET'S OBLIGATION TO TEST OPTICAL PERFORMANCE OF FIBRE CONNECTIONS**
- (II) PROPOSED OSS/BSS CONNECTION & PROFESSIONAL SERVICE**

Submission by Nucleus Connect Pte Ltd to the Info-communications Development Authority of Singapore

19 May 2011

1. Introduction

Nucleus Connect is Singapore's official Next Generation Nationwide Broadband Network (Next Gen NBN) Operating Company. Incorporated on 14 April 2009, Nucleus Connect is responsible for designing, building and operating the world's first open access ultra high-speed fibre network. As the official Next Gen NBN Operating Company, Nucleus Connect plays a pivotal role in the development of a competitive and vibrant broadband market in Singapore by providing all Retail Service Providers (RSPs) with fair and non-discriminatory access to superior wholesale connectivity services on the Next Gen NBN.

As the appointed Network Company of the Next Gen NBN, OpenNet supplies fibre connections to Nucleus Connect.

2. PROPOSED MODIFICATIONS TO OPENNET'S OBLIGATION TO TEST OPTICAL PERFORMANCE OF FIBRE CONNECTIONS (PROPOSED MODIFIED SCHEDULE 1)

2.1 Background

As the Network Company responsible for rolling out the passive infrastructure of the Next Gen NBN, we believe that OpenNet must be wholly responsible for ensuring that each fibre connection it delivers to its Requesting Licensees (RLs) must be in good working condition. This is a reasonable expectation of a competent network operator. It is disappointing to note that more than 12 months after OpenNet had commenced commercial operations, and despite having escalated this matter to IDA and OpenNet, this problem remains unresolved. This has led to much inconvenience for OpenNet's RLs, RSPs and End Users. The efficiency of RLs has also suffered due to the significant number of connections encountered that have been found to be "not in working condition", resulting in higher costs for RLs.

Due to the importance of OpenNet's role in the entire value chain of the Next Gen NBN, we believe that it is important to first underscore the expectations of OpenNet as a network operator:

- OpenNet must ensure that it delivers a connection that is in good working condition, and meets a minimum quality of service to enable its RLs to offer services over that connection. We would note that in the original submission of its ICO, OpenNet had proposed to carry out end-to-end testing of connections. It is surprising to note that OpenNet now discovers that it is unable to carry out such testing, and is now proposing an alternative solution, which while relieving OpenNet of its obligations, imposes operational challenges to and increases the cost structure of RLs.

- OpenNet should only commence billing for the service it delivers after it has ascertained (and RLs have confirmed) that the service provided by OpenNet is in good working condition and meets the agreed standards. We note that IDA has confirmed that OpenNet has instead commenced billing for services even when it has delivered a connection that has been found to be “not working”. This is clearly not acceptable, and Nucleus Connect would humbly submit that IDA should take regulatory action against OpenNet for such unfair business practices since IDA itself confirms that this is indeed OpenNet’s business practice (see paragraph 4 of IDA’s consultation paper).

We would note that the above expectations are both reasonable and are in accordance with normal business practices, not just in the info-communications industry but for the entire services industry. OpenNet has failed on these fundamental areas, and has not been able to meet the obligations which OpenNet itself had proposed in its ICO (and which had been approved by IDA). OpenNet has now proposed a process to relieve it of its original obligations. Therefore this process must be seen as OpenNet requiring the assistance of its RLs to relieve it of its original obligations.

While Nucleus Connect agrees that the proposed process may improve the current situation to some extent, we also believe that there are operational issues that need to be resolved and clarified before OpenNet’s proposed modifications can be implemented.

Nucleus Connect has highlighted such operational challenges, as well as provided specific comments to the proposed modified Schedule 1 in our submission. Further, we would request that our response to IDA’s proposed QoS Framework to be imposed on OpenNet, which is closely related to this matter, be taken into consideration in this public consultation as well.

2.2 General Comments

Nucleus Connect submits that OpenNet’s proposal falls far short of being customer-friendly but instead pushes much of the burden onto its RLs. This is an irony given that it is OpenNet’s failure to meet its obligations that gave rise to this proposal. Clearly, a customer friendly organisation would ensure that inconvenience and costs to its customers are minimised. OpenNet has instead provided a proposal which minimises its own inconvenience and costs while increasing that of its customers. Only a Dominant Licensee, not subject to competitive pressure, has the ability to adopt such behaviour.

Nucleus Connect submits that the following key areas need to be considered by IDA in its evaluation of OpenNet’s proposal:

- *Adopting this proposal must not absolve OpenNet from its responsibility to ensure that all other segments of its network are 'in good working condition'.* We note that the main motivation for this proposal (besides the high incidence of Termination Point (TP) failures), is the challenge for OpenNet to carry out end-to-end testing of its fibre connection, due to its inability, and the inconvenience of having, to make a separate appointment with End Users to access the End User premises for such testing. However, Nucleus Connect would note that OpenNet's network comprises various segments, of which the MDF to TP segment is the only segment requiring access to End User premises to carry out testing. Therefore, OpenNet must be required to test all other segments of the network to ensure that the fault does not lie in those segments. This will ensure that when a TP failure is identified, the fault can be isolated to the MDF to TP segment, resulting in a shorter time required for troubleshooting and rectification. Adopting the present proposal by OpenNet must not absolve OpenNet from its fundamental commitments to test its network and ensure workability before handing over the connection to RLs. Should it be found that OpenNet does not carry out such testing, Nucleus Connect submits that OpenNet should be subject to a financial penalty payable to the affected RL.
- *OpenNet must be required to carry out end-to-end testing of its network during TP installation.* OpenNet claims that it not possible to meet its obligations to carry out end-to-end testing as it needs to access End User premises, which would pose an inconvenience to End Users. However, we would note that if OpenNet is competent, and serious in meeting its obligations, OpenNet can carry out end-to-end testing of its network at the point OpenNet installs the TP in the End User's premises. There is nothing to stop OpenNet from "patching through" its network from TP to Central Office, carrying out the requisite tests, and then disconnecting the network where necessary. Based on the reasons for TP faults provided by OpenNet, Nucleus Connect submits that a substantial number of such faults could be have been identified and rectified if OpenNet had carried out such testing. We believe that rather than allow OpenNet to absolve itself from its obligations and responsibilities, notwithstanding the joint investigation process proposed in the modified Schedule 1, IDA must require OpenNet to carry out end-to-end testing of its network at the point of TP installation, and to provide such reports to RLs.
- *OpenNet must commit to a timeframe from fault reporting by RLs to fault rectification by OpenNet.* Nucleus Connect notes that OpenNet only specifies a timeframe by which it would aim to arrive on-site. We would further note that this timeframe is not a commitment but provided on a best-effort basis. This is clearly not acceptable. We would note that once a fault is reported to OpenNet until the time OpenNet has rectified the fault, the RL's field engineer is unable to proceed with the next installation appointment. Further the End User is also inconvenienced as it is unclear when the fault can be expected to be rectified. A committed timeframe, supported by a penalty framework is

therefore required to ensure that OpenNet takes its commitments seriously. We would note that OpenNet has thus far not demonstrated its urgency and commitment to resolving this issue, thereby allowing this problem to still exist some 8 months after Nucleus Connect had escalated the problem to both OpenNet and IDA. Further, we would note that as the RLs' field engineers are not able to leave the End User premises once a fault has been escalated to OpenNet, this results in greater inefficiency for the RLs (due to the smaller number of installations each engineer can carry out per day), and also higher costs (due to the need to therefore hire more staff to make up for such inefficiency).

- *The timeframe to be imposed on OpenNet, from receiving a fault report to fault rectification, ought to be 1 hour.* Since RLs are in effect helping to absolve OpenNet from its failure to meet its ICO obligations, OpenNet can reasonably be expected to invest in sufficient resources such that the inconvenience and inefficiency caused by OpenNet to its RLs is minimised. With greater resources, the on-site arrival time must be reduced. Further, if OpenNet carries out testing in other segments of its network and isolates the fault to the MDF to TP segment (as highlighted above); there is no reason that OpenNet cannot meet this timeframe. This commitment should be specified in the ICO, supported by a penalty framework to compensate RLs for the increased cost of resources. Having a specific timeframe also allows the End User to decide if he/she can wait for the arrival for OpenNet's representative (see further comments below).
- *OpenNet's joint investigation process does not address all scenarios.* In order to meet the End User requirements, Nucleus Connect goes the extra mile to provide End User installations outside of business hours. It is unclear if OpenNet's joint investigation can be activated if a TP failure is encountered outside of business hours. It is also unclear how OpenNet would address a scenario where the End User is not able or not available to wait for the arrival of OpenNet's representative. We believe that in order to avoid confusion and disputes, OpenNet's proposal must address all scenarios.
- *IDA's proposed QoS Framework does not resolve the issue, nor compensate RLs for increased costs.* While Nucleus Connect supports IDA's proposal to impose a QoS Framework on OpenNet, we would humbly submit that the QoS Framework will not resolve this issue, nor compensate RLs for the increased costs. Further, OpenNet has proposed that where such faults occur, OpenNet will no longer be liable to pay compensation to RLs for its failure to meet its Service Activation Period (SAP) and MTTR commitments. IDA must not allow a Dominant Licensee such as OpenNet (that is not subject to competitive pressure) to use its failure to meet its commitments to further dilute its compensation commitments. Instead IDA ought to require OpenNet to compensate RLs for such failures. Compensation should extend beyond the SAP claims to cover the RLs' physical man-hour installation charges for each failed installation, as well as claims from RSPs against RLs. OpenNet should also waive all its charges if End

Users decide to terminate the connection due to OpenNet's failure to deliver a connection in good working condition, and in a timely manner.

OpenNet may argue that it should not be required to uphold its SAP and MTTR commitments as it has also committed to only commence billing if a connection is confirmed to be working. However, IDA must reject such arguments, as OpenNet's business practice of commencing billing for services even when the service is not working is flawed. Instead, IDA ought to take action against OpenNet for adopting such unfair practices.

- *OpenNet must not be allowed to impose any on-site charges.* OpenNet has proposed to impose a charge on RLs if the fault is found to be attributable to RLs. OpenNet has assumed that RLs will behave frivolously and therefore a charge is needed to discourage such behaviour. However, as highlighted above, each time a RL is forced to adopt this process, the RL actually incurs costs as its field engineer is stranded and cannot be deployed to carry out another installation. We would note that the cause of such inefficiency is not the RL, but attributable to OpenNet. There is therefore no logical reason for RLs to be frivolous on such matters. Therefore Nucleus Connect submits that OpenNet must not be allowed to impose any on-site charges, even if it was subsequently identified that the fault does not reside in OpenNet's network. If at all, OpenNet ought to be required to compensate RLs each time a fault has been found to be attributable to OpenNet or OpenNet's network.
- *OpenNet's restriction of the joint investigation to 2 business days from handover of the connection is not reasonable.* We would note that OpenNet has restricted its joint investigation proposal to be applicable as long as End User installation takes place within 2 days from OpenNet's handover of the connection to RLs. This clearly demonstrates that OpenNet has no real interest in seeking a resolution to this matter, a matter that is fully attributable to OpenNet's failure as a NetCo. Installation appointment dates and times are specified by End Users, therefore OpenNet must provide for such flexibility. We would note that by providing flexibility (and being more customer friendly), OpenNet will not "lose out" since its 12 month minimum contract period will also commence when the End User installation is completed. OpenNet can only be allowed to impose this restriction if, and only if, it can prove that at the point of handover, the connection is in good working condition. This is clearly something it is not able to do, hence the need for this consultation. Since RLs are expected to assist OpenNet, we believe that OpenNet must adopt a more customer-friendly approach, instead of the high-handed approach of a Dominant Licensee.
- *It is not clear whether the missed SAP compensation framework is still relevant with the proposed joint investigation process.* OpenNet must be under a clear obligation to deliver the Termination Point in good working condition. It is thus disturbing to note that

OpenNet is attempting to circumvent its responsibility under the compensation framework in its ICO for missing its SAP by adopting the joint investigation process. If the compensation framework is no longer applicable under the joint investigation process, then OpenNet must be required to offer a “replacement compensation framework”. Nucleus Connect has proposed areas where a compensation framework would be applicable in our response to IDA’s proposed QoS Framework to be imposed on OpenNet dated 16 May 2011.

- *It is unclear why OpenNet has not proposed any process to address Non-Residential issues.* Nucleus Connect would note that similar to Residential End-User Connections, OpenNet also faces quality issues with respect to Non-Residential End-User Connections. For example, because OpenNet installs the Termination Point upon receiving an order, an RL can expect to find the Termination Point in good working condition at point of handover. But surprisingly, such is not the case. This further supports the fact that OpenNet does not carry out proper testing of its network before handover. In the circumstance, it would be reasonable for OpenNet to propose a modification to Schedule 2 of its ICO to address such problems.

In addition to the above issue, the proposed modifications should also address the high incidence of missed SAPs by OpenNet for Non-Residential premises. In this regard, we would propose that RLs be allowed to engage 3rd party contractors to install in-building cabling on behalf of OpenNet, where OpenNet is unable to do so in a timely manner, and to pass on the charges for doing so to OpenNet. Further, over and above SAP compensation, OpenNet must allow End Users to terminate services, at no cost to RLs, if OpenNet is unable to deliver a connection that is in good working condition, and in a timely manner.

2.3 Specific Comments on Schedule 1

Nucleus Connect’s comments on the specific clauses of Schedule 1 can be found below.

Clause	Comment
6.7	<p>This clause should be modified such that it stipulates that without prejudice to clause 6.7A, OpenNet must test all relevant segments of its network to ensure that it delivers the Residential End-User Connection in good working condition.</p> <p>Further, OpenNet must be required to carry out <u>bi-directional</u> testing at 1310nm, 1490nm and 1550nm, and given its track record of not being able to deliver connections that are in good working condition, be required to</p>

	provide RLs with such test reports before it can commence billing RLs for such connections.
New 6.10(e)	Clause 6.10(e) must be deleted. It is plainly unreasonable and unfair that OpenNet is absolved from any liability or responsibility even though the delay is attributed to OpenNet or its network. In such a scenario, it would be extremely illogical and unfair that OpenNet would not be liable to the RLs for failing to meet the service activation period under clause 6.9 whereas RLs would nonetheless still be liable to their customers for the delay! OpenNet must still remain liable to meet the service activation period as per clause 6.9!
6A	The use of the term "joint investigation" in this clause may be confused with that used in clause 11.9. We therefore propose that a different term be used to reduce confusion, and also to ensure that all parties are clear that this clause refers to pre-RFS faults, while clause 11.9 refers to post-RFS faults.
6A.1	The entire section after "does not lie within the RL's network" ought to be deleted. See our comments on 6A.1(a) to (f) below.
6A.1(a) to (f)	There is no need to specify such steps. As explained above, RLs have no logical reason to be frivolous in such matters, given that this increases cost and inefficiency for the RLs, and can also give End Users a poor perception of the Next Gen NBN. However, should IDA decide to retain the clauses, Nucleus Connect's comments on the specific clauses (below) ought to be considered.
6A.1(a)	The words "the subscribed Port" should be added after "low optical light" for clarity.
6A.1(b)	The word "approved" should be replaced with the words "industry standard". It is otherwise unclear who the approving authority is.
6A.1(c)	<p>The word "approved" should be replaced with the words "industry standard". It is otherwise unclear who the approving authority is.</p> <p>Further, we would note that it is not a RLs responsibility to clean dirty connectors and ferrules at the TP, but rather it is OpenNet's primary responsibility to ensure that the TP is handed over in a good working condition, ready for RLs to simply connect their equipment. Therefore, OpenNet is now requiring RLs to carry out tasks that are over and above the RLs responsibility. This being the case, this clause ought to state that where RLs accidentally damage the TP in the process of carrying out cleaning, RLs are not liable for such damage. Again, we would highlight that RLs</p>

	have no vested interest to intentionally cause damage to the TP.
6A.1(d)	This is an unreasonable request. OpenNet has taken the opportunity to impose an unnecessary requirement on RLs and is also seeking to increase the costs of RLs (although this situation has clearly arisen from OpenNet's failure as a NetCo). This clause ought to be deleted.
6A.1(e)	The words "the subscribed Port" should be added after "First Termination Point" for clarity.
Paragraph after Clause 6A.1(f)	As explained above, this clause is not customer-friendly and is clearly unreasonable. For example, what happens if RLs are requested by End Users to install the equipment more than 2 Business Days from OpenNet's handover of the First Termination Point: does this render the obligation on OpenNet to ensure that the TP in good working condition redundant? Surely, this cannot be the case. It must therefore be deleted.
6A.2	<p>In the light of our comments on clause 6A.1 above, consequential changes need to be made to clause 6A.2.</p> <p>Further, instead of a timeframe of 1 hour for arrival, IDA ought to impose a timeframe of 1 hour from time of receipt of a fault report for OpenNet to complete rectification of the fault. In any case, as explained previously, it is more meaningful to specify a committed timeframe for fault rectification, rather than just for arrival.</p> <p>In addition, the words "commercially reasonable efforts to" must be deleted. The obligation must be absolute. It is highly unreasonable and illogical that the RLs' representatives must remain on-site whilst OpenNet's representatives only need to exercise "commercially reasonable efforts" to do so.</p>
6A.3	<p>The requirement that OpenNet and RL's representatives must jointly sign off an investigation report ought to be deleted. The objective of the modified Schedule 1 must be clear and simple: OpenNet must deliver a TP in good working condition. The purpose of the modified Schedule is not to impose another administrative layer of form filling which can lead to further delays in remedying the faults, given OpenNet's historical inflexibility and intransigence in dealing with operational problems.</p> <p>Further, OpenNet's condition that RLs' representatives be present throughout the joint investigation process is not practical and serves only to increase the costs to RLs. Since this process arose from OpenNet's failure,</p>

	and if OpenNet insists on the presence of RLs' representatives, then OpenNet must compensate RLs' for the increased costs, and loss of efficiency.
6A.4	As explained above, there is no reason for RLs to act frivolously. Therefore, this clause ought to be deleted.
6A.4(b)	In light of our comments on clause 6A.1, clause 6A.4(b) is no longer relevant and must be deleted. Further, it is not clear how OpenNet will ascertain whether the RLs had performed the steps in clause 6A.1 properly. Further, it appears that OpenNet is seeking to penalise the RLs if it believes that the RLs has not carried out the steps in clause 6A.1 properly, notwithstanding that the fault is attributable to OpenNet or its network. This is clearly ridiculous and unacceptable. If a fault is attributable to OpenNet, it is irrelevant whether the RL has carried out any checks.
6A.5	Given that a significant majority of the missed SAPs by Nucleus Connect (and therefore claims against Nucleus Connect by RSPs) are caused by OpenNet. We believe that clause 6A.5 should be further modified such that OpenNet should be liable for missed SAP claims against its RLs caused solely by OpenNet, and therefore compensate RLs for such claims against them.
6A.6	Clause 6A.6 can only be retained if OpenNet agrees that billing for the connection only commences upon successful installation by RLs, and any delay is not caused by faults attributable to OpenNet or its network.
11.14	Nucleus Connect submits that IDA should also review OpenNet's current MTTR compensation framework with a view to increasing the amount of compensation that OpenNet must pay to RLs for not meeting its MTTR obligations. At present, the compensation is so low that OpenNet does not take its MTTR obligations seriously, and in fact, it costs RLs more to compile and submit a claim against OpenNet. In this regard, Nucleus Connect would propose that instead of basing the compensation on OpenNet's weekly recurring charge, it should be based instead on OpenNet's "monthly recurring charge". Without an adequate compensation mechanism, OpenNet has no incentive to rectify faults in a timely manner. This is detrimental to the reputation of the Next Gen NBN, and clearly cannot meet IDA's objectives of an internationally recognised broadband infrastructure.

3. PROPOSED OSS/BSS CONNECTION & PROFESSIONAL SERVICE (PROPOSED MODIFIED SCHEDULE 14 & 15)

3.1 Background

OpenNet was awarded the NetCo contract in September 2008, more than 6 months before Nucleus Connect was awarded our OpCo contract. We are therefore surprised that it has taken OpenNet this amount of time to furnish IDA with its proposed Platform Connection Service Schedule. In contrast, IDA had required Nucleus Connect to provide our Platform Connection Service Schedule by 1 June 2011. Nucleus Connect would have expected IDA to require OpenNet to submit its proposed Platform Connection Service Schedule 6 months ago, thereby ensuring that the public consultation would be completed, and the Service Schedule finalised, before Nucleus Connect is required to submit our Platform Connection Service Schedule.

Nucleus Connect is pleased to submit our comments on the proposed OSS/BSS Connection Service.

3.2 General Comments

In its evaluation of the OpenNet's Schedule 14, IDA should also take note of the following:

- *The drafting of Schedules 14 and 15 ought to be tightened up, for clarity.* The language of the current drafts are simply too vague. Given OpenNet's inflexibility and inclination to adhere strictly to the letter of its ICO, the drafting and language of Schedules 14 and 15 must be improved upon.

The proposed Schedule 14 also fails to address key gaps that were encountered during the Nucleus Connect-OpenNet interconnect testing. For example:

- All handshaking test cases need to be explicitly stated and the exit criteria clearly defined.
 - All end-to-end test cases need to be explicitly stated and the exit criteria clearly defined.
 - Process, scope and responsibilities during testing need to be clearly defined.
 - Charges associated with each test phase - Connectivity, handshaking and end-to-end testing need to be clearly spelt out in the ICO.
- *OpenNet must provide greater details of each module.* OpenNet has only provided a brief description of the various modules in section 3.2. We believe that this is insufficient to enable RLs to make an informed decision, and can lead to much misunderstanding

between OpenNet and RLs. OpenNet must provide the details to have an effective consultation.

- *There is a need to clarify whether RLs are allowed to order OSS/BSS Connection Services only. We believe that such clarity is needed to ensure that OpenNet does not make up its own rules when implementing this Service Schedule, to the detriment of RLs.*
- *Any suspension period that takes place during testing should not be subject to charges. This is especially so if such suspension is requested by OpenNet, or attributable to OpenNet.*

3.3 Specific Comments

Clause	Comments
Schedule 14	
1.2	Save for the first sentence, the entire Clause 1.2 ought to be deleted. The type of work/services to be provided by OpenNet and the corresponding costs thereof ought to be specifically identified and defined in Schedules 14 and/or 15. It should not be addressed by ambiguous generic language such as “..and the quantum of the Charge is not defined under Schedule 15 (Charges), the RL must pay all the reasonable costs incurred by OpenNet in provisioning OSS/BSS Connection & Professional Service...”.
1.3	Clause 1.3 ought to be amended as follows: If the disconnection is due to OpenNet’s fault or equipment, OpenNet must notify RLs in writing of the disconnection as soon as possible. If the disconnection is not due to RL’s fault or equipment, OpenNet must provide RLs with prompt support and assistance to re-establish the connection, at no additional cost to RLs.
1.4	Clause 1.4 ought to set out the specifications (including APIs) required by OpenNet. At the very least, the specifications must be reasonable. Further, we believe that OpenNet must make available all of its documentation or its specifications to allow the RLs to decide what they would like to order. It is not reasonable, especially in an Open Access environment, to provide the documentation only upon RL’s request.
1.5	Clause 1.5 ought to be deleted in its entirety. OpenNet ought to be liable if it breaches the terms of Schedule 14. There is no logical reason or basis for raising the bar to one of “gross negligence, wilful or reckless breach”.
2.1	The words “; or” ought to be inserted at the end of the sentence in Clause 2.1(b)(i).

3.2	In parts of Schedule 14, the words "Service Portal" are used; on the other hand, in other parts of Schedule 14, the words "OpenNet Service Portal" are used. We believe that there is a need to be consistent in the usage of the terminology throughout Schedule 14.
3.3(a)	The proposed approach is cumbersome and potentially creates technical issues for the connectivity. RL would have to install VPN clients on all our PCs and keep them in sync with OpenNet's firewall model and software upgrades. There may also be inter-operability issues between VPN clients and firewall and the overall cost for RL to support such connection would increase. RLs should be allowed to continue connection via the internet as per current practice.
3.4	Clause 3.4 ought to state that there is no cap on the number of Service Portal user accounts to which a RL can subscribe.
4.2 & 4.3	Clauses 4.2 & 4.3 basically state that RLs must pay the Charges as defined in Schedule 15. However, it is not entirely clear from Schedule 15 exactly which Charges will be applicable. For example, if a RL wants connectivity via B2B Web Services (Public Internet secured VPN), must it pay the Charges in paragraphs 14.2.2, 14.3.1 <u>AND</u> 14.3.2 of Schedule 15?
4.4	OpenNet should state that a single application for connection includes connectivity to both test and production environments.
4.5	The nature of B2B interface is to support simultaneous high volume connections. This clause does not make sense.
5.5	To amend Clause 5.5 such that it stipulates that the firewall port and the connectivity setup charges must be specifically stated in Schedule 15.
5.6	Clause 5.6 ought to set out the specifications required by OpenNet. OpenNet (whether by itself or KSC) cannot be allowed to impose 'artificial' technical barriers on the implementation of the transmission link. For example, RLs must be free to select its own service provider of the transmission link and OpenNet cannot impose additional costs for the transmission.
5.10	Line 5 of Clause 5.10 refers to "...pursuant to the terms and conditions of OSS/BSS Professional Services". Which exactly are these terms and conditions? Which Clauses of Schedule 14 is OpenNet referring to?

	Clause 5.10 must be more specific.
5.11	Line 4 of Clause 5.11 refers to "...pursuant to the terms and conditions of OSS/BSS Professional Services". Which exactly are these terms and conditions? Which Clauses of Schedule 14 is OpenNet referring to? Clause 5.11 must be more specific.
5.13(c)	The grounds given in Clause 5.13(c) cannot be a basis for rejection. They are too wide and ambiguous. OpenNet must be responsible for managing its own resources. Further, OpenNet does not even specify in Schedule 14 what the account limit is.
5.13(d)	Clause 5.13(d) ought to be deleted. OSS/BSS connection is a relatively new service in Singapore and it is reasonable to envisage that there may be difficult technical or engineering issues. OpenNet cannot simply be allowed to reject the Request on this ground.
5.14	See response to Clause 5.13(c). In any case, the words "due to unavailability" is simply too wide and ambiguous. Is the operation of Clause 5.13(c) linked to Clause 5.13(c) only? Further, RLs should not be required to take up Professional Services for account creation. Clause 5.14 ought to be deleted.
6.1 & 6.2	It is noted that OpenNet may provide customised services outside the standard services. However, the scope of "standard services" is not fully set out in Schedule 14. Only a brief description of standard services is set out in Clause 3.2. Given OpenNet's inflexibility and inclination to adhere strictly to the letter of its ICO, there are concerns that OpenNet will not be willing to cater to customisations. Hence, it is necessary for OpenNet to specify the full scope of "standard services" in Schedule 14. In addition, Clause 6.2 ought to be amended such that OpenNet's rejection of RL's customisation request must be reasonable.
6.4	OpenNet should clarify that new and enhanced system functionality will not impact APIs that have already been made known to RLs.
7(b)	We believe that the entire clause 7(b) is unnecessary and should be deleted. The Project Study serves no purpose except to increase the costs to RLs. OpenNet should instead modify Annex 14A so as to gather all the information it requires to facilitate the provision of services.
7.1	Is Clause 7 only applicable to OBPS and not standard services? If yes,

	Clause 7.1 ought to be amended to specify so more clearly.
7.2	If Clause 7 is only applicable to OBPS and not standard services, it is not clear why there is a cross-reference to Clauses 5.1 and 5.2?
7.3(c)	The ground given in Clause 7.3(c) cannot be a basis for rejection. It is too wide and ambiguous. OpenNet must be responsible for managing its own resources.
7.3(d)	Clause 7.3(d) ought to be deleted. OSS/BSS connection is a relatively new service in Singapore and it is reasonable to envisage that there may be difficult technical or engineering issues. OpenNet cannot simply be allowed to reject the Request on this ground.
7.4	<p>It is unclear why there is a need for multiple layers of processes to commence a Project Study? The requirement of a pre-Project Study ought to be dispensed with.</p> <p>It is not sufficient for OpenNet to just provide a Project Study quotation within 15 Business Days upon receiving the Request. There must be a long stop deadline for OpenNet to furnish the Project Study.</p> <p>What is the basis for a Project Study quotation? Is this in addition to the Charges to be stated in the Project Study? If yes, why are there 2 sets of Charges?</p> <p>The schedule and Charges stated in the Project Study must be fixed, not estimates. Further, there is no logical reason why the Charges for the Project Study cannot be stated in Schedule 15; it must not be "open ended" to be determined by OpenNet. It ought to be a fixed cost or based on man-days pricing. Based on current experience, handshaking and end-to-end testing need not be a project study activity. A list of test cases and estimated man days should be provided for RLs, and spelt out in the ICO.</p>
7.5	<p>Why is there a need for multiple layers of processes to commence a Project Study? The requirement of a pre-Project Study ought to be dispensed with.</p> <p>The Charges stated in the Project Study must be fixed, not estimates. Further, there is no logical reason why the Charges for the Project Study cannot be stated in Schedule 15; it must not be "open ended" to be determined by OpenNet. It ought to be a fixed cost or based on man-days pricing.</p>
7.6	What is the basis for a Project Study Fee/quotation? Is this in addition to the Charges to be stated in the Project Study? If yes, why are there 2 sets of Charges?

7.7	<p>The timeframe and charges must be fixed, not estimates.</p> <p>Further, OpenNet must be obliged to complete the Project Study within a long stop deadline. The words "use its reasonable endeavours to" must be deleted.</p> <p>There must be a timeframe for parties to reach an agreement on the terms of the Project Study (such agreement of either OpenNet or RL must not be unreasonably withheld or delayed). RLs must be given an opportunity to raise any objection to the Project Study.</p>
7.8	<p>Any changes to the schedule must be subject to the agreement of both OpenNet and RL (such agreement not to be unreasonably withheld or delayed).</p>
7.10	<p>Clause 7.10 ought to be deleted. Why are there multiple sets of Charges and costs for a Project Study?? If OpenNet is going to impose Project Study Fee and Charges for Project Study (see Clause 7.4), why is there an additional need to impose cancellation charges and other costs and expenses?</p>
7.13	<p>Clause 7.13 refers to "the Project Study Fee provided in Schedule 15 (Charges)". However, there is no mention in Schedule 15 of any Project Study Fee.</p> <p>Further, for purposes of connectivity, handshaking and end-to-end testing, project study fee should not apply. OpenNet should explicitly define the charges related to handshaking and end-to-end testing.</p>
8.1	<p>There must be a timeframe for parties to reach an agreement on the terms of the Project Study (such agreement of either OpenNet or RL must not be unreasonably withheld or delayed). RLs must be given an opportunity to raise any objection to the Project Study. It cannot be a "take it or leave it" approach by OpenNet.</p>
8.2	<p>The obligation on OpenNet to provide OSS/BSS Professional Services must be absolute. The words "use its reasonable endeavours to" must be deleted.</p>
8.3	<p>The obligation on OpenNet to provide OSS/BSS Professional Services must be absolute. The words "use its reasonable endeavours to" must be deleted.</p> <p>Any increase in OpenNet's costs must be subject to the agreement of both OpenNet and RL (such agreement not to be unreasonably withheld or delayed).</p>

8.4	Any delays in the timeframe must be subject to the agreement of both OpenNet and RL (such agreement not to be unreasonably withheld or delayed).
8.6	Clause 8.6 ought to be amended such that OpenNet's approval must not be unreasonably withheld or delayed.
8.7	Clause 8.7 should be modified to include a commitment by OpenNet to support the deployment to production upon the RL's notification of the actual date of deployment.
8.9	The support that will be provided post-handshaking and end-to-end testing should be clearly spelt out.
8.10	It is only fair and logical that the cancellation charge ought to be based on a pro rata of the Charges stated in the Project Study.
8.11	Clause 8.11 ought to be amended such that the costs must be stated in the Project Study and calculated in accordance with Schedule 15. The "Scope of Work and Terms and Conditions" is not defined.
9.1	OpenNet must be liable for disruption to the OpenNet Platform caused by the fault or equipment of OpenNet and its suppliers.
9.5	The obligation on OpenNet to rectify the fault must be absolute. The words "use reasonable efforts to" must be deleted.
9.6	With reference to Clause 9.1, if RLs are expected to accept that the OpenNet Platform is not fault free, then OpenNet should similarly not apply No Fault Found Charges since disruption is expected.
9.8	OpenNet should obtain confirmation from RLs that connection is restored. This cannot be a unilateral decision by OpenNet.
9.9	OpenNet's agreement to the date/time/venue cannot be unreasonably withheld or delayed.
9.15	Clause 9.15 ought to be amended as follows: (i) unless in cases of emergency, OpenNet must consult RLs before carrying out any suspension, modification, removal or addition, (ii) the suspension, modification, removal or addition must not adversely affect RL's systems and operations and (iii) the words "OpenNet will not be liable for any such action" must be deleted.

9.17	<p>The words "use its reasonable efforts to" ought to be deleted.</p> <p>Further, Clause 9.17 ought to be amended such that it stipulates that OpenNet remains obliged to accept requests for Mandated Services from RL via a dedicated email address and fax number, regardless whether or not the OpenNet Platform is available.</p>
9.18	<p>Clause 9.18 ought to be deleted. The response time set out in Clause 19.19 is a form of service level guarantee.</p>
9.19	<p>The words "use its reasonable endeavours to" ought to be deleted.</p>
10.1	<p>OpenNet's system must be resilient. Clause 10.1 ought to be deleted in its entirety.</p>
10.2	<p>RLs must not be incurring professional services charges when changes take place in OpenNet's system.</p>
10.3	<p>The limitation to RLs in terms of system throughput should be explicitly stated.</p>
10.5	<p>It must be a material breach of the ICO Agreement before OpenNet can trigger any right of termination or suspension of RL's named user accounts.</p> <p>Please delete the words ", vary".</p>
10.6	<p>In view of OpenNet's MSI obligations, Clause 10.7 must be deleted in its entirety.</p>
11.1	<p>Why is there a term licence of 1 year? What is the purpose of the term licence? The Connection Service should be perpetual subject to termination of the service. Further the reference to Professional Services in relation to Commencement Date seems to indicate that Professional Services are mandatory. Nucleus Connect would like to seek clarification if this is indeed the case.</p>
11.2	<p>Why is Clause 11.2 necessary? Wouldn't it be more logical and efficient to dispense with the requirements of Clause 11.2?</p>
12.2	<p>The exclusion clause in Clause 12.2 is simply too wide and absolves OpenNet of any responsibility or liability even when it is clearly at fault or in breach of Schedule 14. Clause 12.2 must be deleted in its entirety.</p>
13.1	<p>Why is there a minimum contract term of 1 year? In any event, the</p>

	automatic renewal provisions of Clause 13.1 are inconsistent with Clause 11.2. Clause 13.1 must be deleted in its entirety.
13.2	RLs may keep a pool of user accounts to ensure that when required they are available, this clause creates unnecessary administrative work for the RLs. There is no reason for OpenNet to recover such accounts.
13.5	Clause 13.5 ought to be deleted in its entirety. The termination rights in Clause 13.6 are sufficient.
13.7(a)	The words "in OpenNet's reasonable opinion," ought to be deleted.
13.7(d) & 13.7(e)	Clauses 13.7(d) & 13.7(e) ought to be deleted in their entirety. OpenNet is under an obligation to provide the OSS/BSS connection service which is fit for purpose and such an obligation must not be contingent on OpenNet's ability to secure the necessary rights.
13.8	Clause 13.8 ought to be deleted in its entirety. The termination rights in Clause 13.6 are sufficient.
13.9	Clause 13.9 ought to be deleted. OpenNet is under an obligation to provide the OSS/BSS connection service which is fit for purpose and such an obligation must not be contingent on the availability of an OpenNet OSS/BSS data centre!
13.10(b)	Why should additional costs of reinstatement be imposed? RL has already paid OpenNet the Charges in accordance with the Project Study and Schedule 15.
13.10(c)	Are there monthly recurring Charges? If yes, these Charges are not transparent and are not set out in Schedule 15. Clause 13.10(c) must be deleted.
Schedule 15	
14.2.1, 14.2.2, 14.2.3 & 14.3.1	"Cancellation charges" is defined as 'Charge based on work that has already been carried out'. It is not clear what does this exactly mean, or what is the charge. The clause should be amended to be more specific and clear.
14.2.1, 14.2.2 & 14.2.3	"Termination Charge" is defined as 'Man-day(s) cost incurred to remove user system access and re-configure Firewall'. It is not clear what is the 'man-day(s) cost' and how much it is. The clause should be amended to be more specific and clear.

14.3.1	<p>Costs of software and hardware which are deployed in the provision of standard services must NOT be passed on to RLs. The clause should be amended accordingly.</p> <p>Further, based on our experience on the integration with OpenNet, there are 2 phases for the testing: Phase 1 Handshaking and Phase 2 End-to-end testing. Our experience from carrying out Phase 1 (Handshaking) integration with OpenNet, has shown that OpenNet's system is not 100% error free, thus Handshaking testing should not be subject to any professional charges, since RLs are actually helping OpenNet discover bugs in its system.</p>
14.3.2	<p>Reference is made to "maintenance and support agreement". What is its relevance? Schedule 14 makes no reference to a 'maintenance and support agreement'. Paragraph 14.3.2 ought to be deleted.</p>

4. Conclusion

Nucleus Connect appreciates the opportunity to provide our feedback and comments on the proposed modifications to Schedules 1, 14 and 15 of OpenNet's ICO. However, we believe that as the approving authority of OpenNet's ICO, IDA must fully understand the intent of each schedule and clause in the ICO. This is especially so since IDA is also the authority to hear disputes between RLs and OpenNet. Only with such clarity can disputes be resolved expediently, and RLs can have assurance that OpenNet is not allowed to impose additional requirements or pass on unnecessary costs to RLs by exploiting ambiguity in its ICO.

Nucleus Connect has highlighted both operational issues, as well as concerns with the proposed terms of the ICO. The concerns have arisen through actual experience in dealing with OpenNet even before Nucleus Connect commenced commercial operations. Many of the operational issues still exist despite having been escalated more than 6 months ago.