INTERCONNECTION OFFER FOR THE PROVISION OF SERVICES ON THE NEXT GENERATION NATIONWIDE BROADBAND NETWORK (NEXT GEN NBN")

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OPENNET PTE LTD'S PROPOSED MODIFICATIONS

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

7 May 2012

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 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.   General Comments

Nucleus Connect supports IDA's decision to carry out a second round of consultations on OpenNet's proposed modifications to its ICO. Nucleus Connect had provided our comments to the first round of consultations, and while we note that many of our comments were accepted by IDA, IDA had chosen not to require OpenNet to implement some of the improvements suggested by Nucleus Connect. In this regard, we would respectfully request IDA to re-consider its decision to disregard our proposals and suggestions, which are aimed at ensuring that the Next Gen NBN is forward-looking and operationally efficient.

In any case, as highlighted previously, Nucleus Connect believes that IDA plays an important role in ensuring that OpenNet fulfils its role as the NetCo. As has been experienced to-date, there have been numerous examples where OpenNet only improves its processes and/or quality of services in response regulatory intervention. Notwithstanding this review, IDA must be prepared to take action against OpenNet for its continued failures, failing which the Next Gen NBN will become a white elephant.

2.1   OpenNet's must meet its SAP Commitments, and not just Quotas

As highlighted in our previous submission, dividing the Maximum Quota into sub-quotas will result in inefficient use of the quotas. If sub-quotas are allowed, it is likely that OpenNet will end up processing a lower number of orders than committed.

Nucleus Connect submits that it is crucial for OpenNet to meet its SAP. We note that OpenNet has proposed a process for increasing its quota. However, we believe that OpenNet's proposal is flawed as it is based on a 12-week historical data. Further, there is no commitment of the quantum of quota it will increase. To this end, Nucleus Connect proposes that OpenNet be required to meet its SAP 99% of the time, failing which IDA should impose financial penalties on OpenNet which should be passed on to RLs to compensate them for the adverse impact on their business caused by OpenNet's failings. This will ensure that OpenNet does it utmost to meet its obligations, and not hide behind quotas and processes. OpenNet must comply with the SAP commitments it made in its NetCo Bid submission, failing which it would be extremely unfair to the other participants in the NetCo Bid.

2.2 There is a need for a fair, equitable, transparent and practical classification of property-types

OpenNet appears to be making the issue of property classification unduly complicated than it needs to be. Further, we note that nothing in the NetCo or OpCo RFPs states that the NetCo will determine the classification of property. Therefore the classification of properties should follow a simple set of guidelines, and where there is ambiguity IDA should be the party to determine the property classification. We would note that as a Dominant Licensee, there is no incentive for OpenNet to determine property classification in a fair, equitable and transparent way. This is evident from the complicated processes that OpenNet is attempting to introduce, which makes the entire process for ordering a service cumbersome.

Nucleus Connect submits that the classification of property-types must provide certainty for all users of the Next Gen NBN. It should not be based on what OpenNet decides, and require users to rely on a dispute process to "correct" the classification.

Therefore, Nucleus Connect would propose that the following guidelines be used for the classification of property-types:
- Residential premises should refer to all premises used for human habitation (supported by utilities bills etc, if necessary).
- Non-residential premises will refer to premises in Non-residential buildings not used for human habitation.
- NBAPs will refer to points or locations that are physically situated outside of buildings (for example, lamp-posts and bus-stops).

2.3 The proposed Fibre Takeover Process is onerous

OpenNet's proposed Fibre Takeover Process should be deleted in its entirety. While we note that OpenNet has modified its process, the proposed process still does not address the contractual and commercial arrangements between the RL, RSP and End User. We also note that OpenNet has adopted a position where it can take unilateral action to terminate a service. Nucleus Connect believes that this proposal can have further detrimental impact on the already poor reputation of the Next Gen NBN. If IDA allows OpenNet to implement its Fibre Takeover Process, then OpenNet must be liable to any service disruptions or damages (contractual or otherwise) caused by its actions.

We would also note that OpenNet must not be allowed to use the Fibre Takeover Process to shirk its responsibility to deliver services over 2 fibre strands (in Residential premises) and where necessary, over a 2nd TP.

Rather than a Fibre Takeover Process, we would propose that OpenNet abolish the minimum contract period. This will ensure that RLs will promptly release any fibre no longer in use. It will also address OpenNet's concerns, and because termination is initiated by RLs, reduce the risk of wrongful termination, as well as interference with contractual terms between RLs, RSPs and End Users.

2.4 Delays caused by "Spring-boarding" should count towards SLA claims

We note that OpenNet has elected not to rollout its Network to every MDF room, but has chosen to springboard its Network from adjacent MDF Rooms. This is a commercial decision taken by OpenNet.

As IDA is aware, the issue of spring-boarding has caused significant delays in the delivery of services to affected premises/End Users. Therefore OpenNet should not be allowed to exclude access issues caused by spring-boarding from SLA computations. It must be required to bear full liability since it was fully aware of the risks when making the decision to reduce its costs of rollout by not rolling its Network to all MDF Rooms. RLs are affected by OpenNet's decision to springboard its Network, and therefore OpenNet cannot be allowed to absolve itself from liability.

2.5 The SLA remedies in OpenNet's ICO are insufficient

The SLAs in OpenNet's ICO have been in force since OpenNet commenced commercial services. The persistent poor service delivery by OpenNet since its launch clearly shows that the SLA remedy frameworks in OpenNet's ICO are not sufficiently adequate to deter OpenNet from continuing with its poor service delivery. Therefore, there ought not to be

any maximum cap on the SLA remedies and OpenNet must not be allowed to rely on the SLA remedy frameworks as its sole and exclusive remedy.

Accordingly, for example, in case of the Schedule for Non-Residential End-User Connections, the following amendments ought be made: (i) clauses 2.8 and 2.9 ought to be deleted in their entirety. (ii) the SLA remedy frameworks clause 6.12, 11.16 and 12 ought to be amended accordingly to remove the maximum cap on the amount of rebates.

2.6   OpenNet should provide a rebate of any undisputed amounts

Currently as drafted, if a RL disputes OpenNet's reason for rejection, records and/or amount of SLA rebate, the RL will not be credited with any rebate until and unless the dispute has been resolved (for example, see clause 2.7 of Schedule for Non-Residential End-User Connection). These provisions ought to be amended such that only the DISPUTED amount will not be credited to the RL's account whereas the undisputed amount will still be credited to the RL. Otherwise, given OpenNet's unfriendly business practice, OpenNet may withhold the entire amount of rebates even though only a small portion of the amount is being disputed. Already, we have seen undue delay in OpenNet's processing of SAP claims and this must be rectified.

2.7   OpenNet must not be allowed to discourage self-installation by imposing onerous condiitons

Nucleus Connect applauds IDA's decision to allow RLs to self install TPs. We believe that this is a move in the right direction especially since OpenNet has been unwilling and unable to fulfil its obligations for Non-residential and NBAP services.

Unfortunately, we note that although IDA's intention is to overcome OpenNet's shortcomings, OpenNet is seeking to make it difficult for RLs to carry out self-installation of TPs through the imposition of onerous terms and conditions such as the requirement for submission of regular reports as well as restricting the use of 1 OpenNet fibre to 1 End-User Connection. This is not acceptable.

Since OpenNet has been unable to deliver on its commitments, OpenNet should not be allowed to interfere nor make it more burdensome for RLs to carry on their business. OpenNet's responsibility should now be relegated to delivering its fibre connectivity to the point of interconnection, and RLs should be free to manage the use of the TP and self-installed fibre.

2.8   It should be specified that OpenNet's compensation framework is based on Calendar Days

Clause 6.9 of Schedule 1 (as well as similar clause(s) in other Service Schedules) should be modified to clarify whether the compensation is based on 'Calendar Days' or 'Business Days'. OpenNet has taken the erroneous position that the compensation should be based on Business Days and hence, Non-Business days will not be counted towards the amount of compensation. We submit that this is a flawed and unfair interpretation of the relevant provisions.

If it was intended to be 'Business Days', the drafter of the OpenNet ICO ought to have used the term 'Business Day'. 'Business Day' is specifically defined in Schedule 18 of OpenNet's ICO. On the contrary, the term 'days' was used instead. If it is not a defined term, it must thus be given its ordinary and objective interpretation. The drafter's intention that 'days' meant calendar days is also manifested in the formula of 'Weekly Recurring Charge' which is pegged to 7/30. It was clear that the drafter intended to include ALL calendar days. If it was intended to be 'Business Days', it would have been logical and fair that the Weekly Recurring Charge's formula ought to exclude non-Business Days, which is NOT the case here. Further, it is also standard industry practice to base compensation for missed SAP on Calendar Days, rather than Business Days. In addition, Nucleus Connect also submits that Calendar Days should be the standard to reflect the urgency of the matter. OpenNet should be doing its utmost to deliver its services expediently, and relying on Business Days does not encourage this behaviour.

3. Specific Comments

Nucleus Connect's specific comments on the ICO are tabulated below. We would note that OpenNet has repeated the same clauses/modifications throughout Schedules for the different Services. Therefore, Nucleus Connect would request that where applicable, IDA takes into account and apply the specific comments to the relevant provisions of the Schedules for the different Services. For instance, many of our specific comments on Schedule 1 also apply similarly to the relevant provisions of Schedules 2 & 3 and vice versa.

Relevant Provision of OpenNet ICO	NC's Comments
SCHEDULE 1 (RESIDENTIAL END-USER CONNECTION)	
Clause 2.2	Nucleus Connect submits that OpenNet's proposed modification does not fully comply with IDA's Direction. OpenNet's proposed modification only provides a timeframe by which it will either accept the claim or seek further information. This does not provide any certainty to the industry of when OpenNet will actually process the claims. Further, there is no clear definition of what OpenNet deems as a valid claim. As drafted, once OpenNet deems a claim as invalid, it no longer has a timeframe to process claims. OpenNet should provide clear guidelines of what it deems as valid or invalid claims, and also clarify that it will provide compensation for any portion of claims that are deemed to be valid, and not simply delay the entire claim just because it deems that a portion of the claims is invalid. In addition, for any claim that is deemed invalid, OpenNet must provide a clear reason within the same 30 Calendar days timeframe.

It is also unclear what OpenNet means when it states that it will provide the <u>corresponding</u> rebate in its next invoice. Nucleus Connect believes that the word "corresponding" is too ambiguous and provides OpenNet with an opportunity to further delay compensating RLs. |

Relevant Provision of OpenNet ICO	NC's Comments
	In order to ensure that OpenNet has sufficient incentive to ensure that all claims are processed and rebated in a timely manner, Nucleus Connect again submits that should OpenNet not process the claims within 30 days, it should automatically be assumed that OpenNet agrees with all the claims and will therefore credit the full amount of the claims to the RL's account. We also again submit that should OpenNet fail to process the claims on time, or is late in crediting the rebate amounts, a late charge should be imposed on OpenNet at the same interest rate imposed by OpenNet for late payments.
Clause 2.6(d) and (e)	Nucleus Connect submits that any buildings where OpenNet is "springboarding" its network from must be excluded from the "exclusion list" and access delays arising from such situations should be included in the overall computation of SLA compensation. OpenNet chose to rollout its network using "springboarding" despite being aware of the risks involved. It should therefore not be allowed to absolve its responsibility for such decisions. Further, OpenNet must be required to provide evidence of its best endeavours upon request by RLs. RLs should not need to raise a dispute in order to obtain such information, as such information is needed in a timely manner in order for RLs to explain to their downstream customers.
Clauses 2.6 (k)	It is unclear why Removal, Repair and Replacement and Relocations requests are excluded from SLG claims. Unless OpenNet can provide justification of why these should be excluded, clause 2.6(k) should be deleted.
Clause 3.1 (A) [after 3.1(A)(d)]	A delay in supply of splitter from OpenNet's vendor is not a good reason for OpenNet to have to deploy an

Relevant Provision of OpenNet ICO	NC's Comments
	additional splitter. As a competent network operator, it is OpenNet's responsibility to ensure that it has sufficient capacity to cater to such increases in demand. Further, Nucleus Connect submits that under the 3-layer model it is not practical for OpenNet to demand that RLs provide a forecast to OpenNet. RSPs treat forecasts and information on promotions as highly commercially sensitive information. It is therefore unlikely that RSPs would want to share such information with Nucleus Connect which operates under an open access model. Nucleus Connect therefore submits that the entire paragraph starting from "Where it is obvious…" be deleted. Finally, we would like to seek IDA's confirmation that it requires OpenNet to carry out inter-rack patching in the MDF room, in accordance with its original commitments in the NetCo Bid and ICO.
Clause 4.1	OpenNet's has included a clause which states that "The RL shall also query the available time slots for that particular End-User's address". This seems to imply that there are different timeslots allocated for different addresses even though the End User profile (i.e. type of premises etc) is the same. This is not acceptable and leads to an inefficient use of the available timeslots. Further, such a fundamental change can have an impact on RLs which are connected to OpenNet via B2B, and OpenNet cannot be allowed to make such changes in a frivolous manner. There must be a clear and fair system of allocating timeslots. OpenNet has included the clause to allow change of End-Users contact details as long as the date of modification is more than 3 Business Days. This is not practical. OpenNet's SAP is 3 Business Days, and in normal

Relevant Provision of OpenNet ICO	NC's Comments
	circumstances, the condition imposed means that in practice the End-User's contact details cannot be changed at all. It should be noted that any change in End-User contact detail does not delay OpenNet's provisioning process. On the contrary, if End-User's contact details are modified in a timely manner, it will help OpenNet during TP installation. This clause should be modified accordingly.
Clause 4.3 (new)	There is no reason for OpenNet to specify that RLs "keep a record of the necessary documentary evidence". Clearly, once submitted and OpenNet itself agrees that it has wrongly classified a premises, it is up to OpenNet to retain its own evidence (as required). There is clearly no need for RLs to retain such evidence. Further, it is unclear under what circumstances will the process described in the paragraph commencing with "At all times, it shall be the responsibility..." be applicable. OpenNet has already stated that only after it re-classifies a premises can a RL place an order. Therefore, there should be no situations where OpenNet will need to bill a RL retrospectively since it would be impossible to place an order prior to a re-classification. Also, should an RL proceed to place an order notwithstanding that a re-classification has not taken place, the RL would already be expecting to pay Non-Residential rates. Therefore this paragraph should be deleted. Should IDA deem that this paragraph is applicable, then Nucleus Connect submits that under such circumstances, RLs should be allowed to cancel the order without charge. Further, OpenNet's insistence that it be paid even though a Dispute has been raised is clearly a breach of the Telecom Competition Code which allows parties to

Relevant Provision of OpenNet ICO	NC's Comments
	withhold the disputed amount until the Dispute is resolved.
Clause 4.4	It is unclear why there is a need for "specific requirements to the switching process". OpenNet should be required to specify such requirements (if any) upfront.

Clearly, any competent operator should be able to provide a SLA for such switching services which is likely to entail only patching at the serving cabinet (where the RL's OE equipment is located).

In order to minimise disruption, OpenNet should also be required to use the spare 2nd strand of fibre at the 1st TP for the switch. Once the switching is completed, the 1st strand of fibre can be "terminated".

Further, there is also no reason why OpenNet needs to impose cost-oriented charges. OpenNet should either be required to specify its charges (if they are able to justify the need for such charges) upfront, or the entire paragraph should be deleted. |
| Clause 5.2 | Nucleus Connect disagrees with the sub-quotas as proposed by OpenNet in Version 2. As stated in our earlier submission, sub-quotas prevent efficient utilisation of the request quotas, and allow OpenNet to avoid its commitments and responsibility. As previously stated, OpenNet should welcome any increase in business and should be willing to increase its quota to meet any increase in demand. OpenNet's reluctance to increase its request quota is a clear indication of its monopolistic attitude. It is fairly clear that OpenNet is only in this business to obtain its $750m in government funding, and has no interest in ensuring the long-term |

Relevant Provision of OpenNet ICO	NC's Comments
	success of the Next Gen NBN. Further, for reasons already provided above, it is not reasonable to OpenNet to request a forecast from its RLs especially under the 3-layer model. Finally, we would submit that it is insufficient to state that OpenNet will increase its quota. RLs and End Users are more interested in ensuring that OpenNet meets its SAP. We would note that as currently drafted, there is no guarantee or commitment from OpenNet to add sufficient quota to meet its SAP. There is only a basic commitment to increase the daily quota, a commitment which OpenNet can meet by increasing its quota by 1 per day (which is clearly missing the intent of IDA's Direction). To this end, Nucleus Connect would propose that IDA require OpenNet to introduce a mechanism to increase its quota such that it would meet its SAP at least 99% of the time. We therefore believe that OpenNet's proposal to base the increase on 95% utilisation over 12 weeks is not useful, and will not improve the current situation. Finally, while Nucleus Connect supports the concept of Seasonal Slots, we believe that such slots cannot be subject to separate terms and conditions but must be offered on the same terms and conditions as the ICO. If OpenNet is allowed to offer Seasonal Slots under different terms and conditions, it will effectively be able to bypass its ICO obligations for many of the orders received during the "major fairs".
Clause 5.3	The reasons for rejection of Requests received via the Platform (a) and (d) are the same.

Relevant Provision of OpenNet ICO	NC's Comments
	In (c), OpenNet should not be allowed to reject a Request on the basis that its Platform is facing technical problems. OpenNet should allow the RL to place an order via the Platform, accept the Request and process it accordingly. Clause (b) and (e) also appear similar, except that in (e), OpenNet has offered to install a Second TP. We believe that (b) should be deleted.
Clause 5.4(b)	Nucleus Connect submits that any buildings where OpenNet is "spring-boarding" its network from must be excluded from the "exclusion list" and access delays arising from such situations should be included in the overall computation of the SLA compensation. OpenNet chose to rollout its network using "spring-boarding" despite being aware of the risks involved. It should therefore not be allowed to absolve its responsibility for such decisions. Further, OpenNet must be required to provide evidence of its best endeavours upon request by RLs. RLs should not need to raise a dispute in order to obtain such information, as such information is needed in a timely manner in order for RLs to explain to their downstream customers. OpenNet should further inform the affected End Users promptly about its inability to provide services to them. "Spring-boarding" could occur after TP installation within the End User's premise. RL and RSPs have experienced great difficulty convincing the End User of OpenNet's problem of this nature, when they were promised service availability a short time after the TP had been installed. In addition, OpenNet must be ready to explain

Relevant Provision of OpenNet ICO	NC's Comments
	the situation to affected End Users, and not take the position that it is the RL's and RSP's responsibility to do so, when in this case, the problem was caused by OpenNet.
Clause 5.5	OpenNet's proposed extensions of the RFS date to 'at least' 10 or 40 business days depending on the reason of insufficient capacity is of great concern. An open date of such nature with regards to RFS will not be accepted by the End User. Further, in such a situation, RL must be allowed to cancel the order without any charges imposed by OpenNet. Nucleus Connect submits that it is not reasonable for OpenNet to require that RLs inform OpenNet within 1 Business Day whether it intends to change the appointment date or cancel the request, as RLs need to check with RSPs, and RSPs with End Users. It is therefore not possible to react within 1 Business Day. Nucleus Connect submits that a timeframe of at least 5 Business Days is reasonable. Further, similar to Clause 5.4(d), "OpenNet's Network has not been rolled out to that location" should be subject to OpenNet not being required to roll out its Network to such locations under the terms of OpenNet's FBO License.
Clause 5.11(f)	OpenNet must be responsible to update its MSI in a timely manner. OpenNet cannot absolve its responsibility just because it re-classifies a premises. This clause should be deleted.
Clause 6.3	As stated in Nucleus Connect's earlier submission, and as recognised in IDA's 27 February 2012 Direction to OpenNet, there is merit in having End Users deal directly with OpenNet for TP-related services. Nucleus Connect

Relevant Provision of OpenNet ICO	NC's Comments
	would therefore like to seek IDA's assurance that there is no change in position, and that OpenNet has been required to deal directly with End Users in such situations. For clarity, we believe that this clause should state that OpenNet will collect payment from End Users directly in the first instance, and that this clause only applies when RLs choose to bill on behalf of OpenNet.
Clause 6.5	As the NetCo, OpenNet should be committed to provide sufficient length of patch cable necessary to connect equipment in the MDF Room. OpenNet should not be allowed to restrict its responsibility to only providing 10m of patch cable. Such a restriction only leads to inefficiency of the entire provisioning process which as it stands already faces many issues attributable to OpenNet.
Clause 6.10(a)	Nucleus Connect submits that any buildings where OpenNet is "spring-boarding" its network from must be excluded from the "exclusion list" and access delays arising from such situations should be included in the overall computation of the SLA compensation. OpenNet chose to rollout its network using "spring-boarding" despite being aware of the risks involved. It should therefore not be allowed to absolve its responsibility for such decisions. Further, OpenNet must be required to provide evidence of its best endeavours upon request by RLs. RLs should not need to raise a dispute in order to obtain such information, as such information is needed in a timely manner in order for RLs to explain to their downstream customers.
Clause 6.10(d)	Nucleus Connect submits that any buildings where OpenNet is "spring-boarding" its network from must be

Relevant Provision of OpenNet ICO	NC's Comments
	excluded from the "exclusion list" and access delays arising from such situations should be included in the overall computation of the SLA compensation. OpenNet chose to rollout its network using "spring-boarding" despite being aware of the risks involved. It should therefore not be allowed to absolve its responsibility for such decisions. Further, OpenNet must be required to provide evidence of its best endeavours upon request by RLs. RLs should not need to raise a dispute in order to obtain such information, as such information is needed in a timely manner in order for RLs to explain to their downstream customers.
Clause 6.11(d)	Nucleus Connect submits that any buildings where OpenNet is "spring-boarding" its network from must be excluded from the "exclusion list" and access delays arising from such situations should be included in the overall computation of the SLA compensation. OpenNet chose to rollout its network using "spring-boarding" despite being aware of the risks involved. It should therefore not be allowed to absolve its responsibility for such decisions. Further, OpenNet must be required to provide evidence of its best endeavours upon request by RLs. RLs should not need to raise a dispute in order to obtain such information, as such information is needed in a timely manner in order for RLs to explain to their downstream customers.
Clause 6.11(g)	It is unclear why this clause is subject to clauses 6.7 and 6A.
Clause 6.12	Nucleus Connect submits that RLs should be allowed to cancel requests without incurring a cancellation charge

Relevant Provision of OpenNet ICO	NC's Comments
	as long as a delay of more than 2 weeks has occurred. The decision should be based on whether OpenNet is able to deliver its service on time, and any failure should give the RL the right to cancel the request. If the request can only be cancelled if the fault lies with OpenNet, then it is subject to further delays and dispute since there will now be a need to establish whether the fault is due to OpenNet, which OpenNet will clearly deny. This clause will therefore be inoperable.
Clause 8.1	Nucleus Connect submits that it is not practical to link the deactivation of a EUC with a need to submit a Patching Service Deactivation Request as the RL will not have any knowledge of the locations or number of patches affected. Nucleus Connect disagrees with OpenNet's introduction of the Fibre Takeover Process. OpenNet should not have the unilateral right to interfere with the contractual arrangements between a RL and its downstream customers. Further, if OpenNet is insisting on implementing its Fibre Takeover, then the Existing RL must be absolved of its liability for the minimum contract term. Finally, we would propose that the word "Additionally" be replaced by the word "Except" since Clause 20 states that in a Fibre Takeover situation, the minimum contract term will be waived.
Clause 9.9	Nucleus Connect would like to propose that this clause be modified as follows : "Where there are available resources, OpenNet will, where possible, first divert critical links to alternative routings before commencing the scheduled service interruption. OpenNet shall ensure that the downtime of

Relevant Provision of OpenNet ICO	NC's Comments
	each fibre link is not more than an hour during the fibre diversion activity." This clause will provide RLs with certainty during outages, and ensure that OpenNet keeps the downtime of each fibre link to a minimum. Nucleus Connect has proposed this modification as based on our experience, OpenNet tends to be frivolous in its execution of service disruptions, and does not keep to the timing or schedule in its notification to RLs.
Clause 9.15	The proposed modification has not addressed the situation where OpenNet needs to be present to provision the service, as required by IDA's Direction.
Clause 11.3	As drafted, it would appear that if OpenNet is unable to provide updates via its Platform, then OpenNet has no obligation to provide any updates. We believe that there is a need to ensure that OpenNet must provide updates by whatever means practicable.
Clause 11.7(a)	We note that IDA has not taken in our comments on additional wavelengths to cater to 10G PON. We would like to seek IDA's clarification on its reasons, as well as understand how IDA intends to address this need.
Clause 11.7(c)	Nucleus Connect submits that the phrase "which the Requesting Licensee shall not dispute" should be deleted. RLs should have the right to dispute any conclusion from OpenNet as long as there is a basis, and the basis can be supported. Allowing such a phrase to be included basically means that under such circumstances, there are no checks and balances on OpenNet's investigations and conclusions no matter how ridiculous they turn out to be.
Clause 11.8(d)	If OpenNet intends to bill the End User for the damage, then OpenNet must obtain the agreement from the End

Relevant Provision of OpenNet ICO	NC's Comments
	User that the End User agrees that he/she is liable for such damage and agrees to pay for the associated repairs. This will ensure that RLs are able to bill on behalf of OpenNet.

However, Nucleus Connect submits that it would be more efficient for OpenNet to bill the End User directly under such circumstances. We therefore propose that the clause be modified as follows:

"Except for (a) above, if it is discovered that any part of the Network located in the Residential Premise is damaged, OpenNet shall impose the relevant charges in accordance to Schedule 15 (Charges) accordingly to the End-User and charge to End-User directly unless the damage is caused by the Requesting Licensee." |
Clause 11.10	During the occurrence of a fault, OpenNet should be doing its utmost to ensure that faults can be resolved within the 8-hour MTTR timeframe. This would include making resources available for joint investigation. We therefore propose that OpenNet's attendance at joint investigations cannot be "subject to OpenNet's resource availability and agreement to the date, time and venue". This clause should be modified accordingly.
Clause 11.15	This clause should be modified to clarify whether the compensation is based on Calendar or Business Days. Nucleus Connect submits that Calendar Days should be the standard to reflect the urgency of the matter. OpenNet should be doing its utmost to resolve all faults expediently, and relying on Business Days does not encourage this behaviour.
Clause 20	We would note that OpenNet's proposed process still does not address why a Fibre Takeover or Handover process is necessary. We also note that OpenNet has not addressed the situation where an Existing RL decides not

Relevant Provision of OpenNet ICO	NC's Comments
	to deactivate the TP and continues to pay for the connection. In the circumstance, Nucleus Connect submits that there is insufficient evidence to require such a process, compared with the confusion, disputes and service disruptions that can potentially arise. We also believe that OpenNet is over-reaching its rights as the NetCo, and attempting to interfere with how RLs carry on their business. We would note that OpenNet has a responsibility to provide 2 strands of fibre to every Residential premises, as well as construct a 2nd TP when requested. OpenNet should therefore not be allowed to impose onerous terms on RLs in order to shirk its responsibility. Further, we would note that under the 3-layer model, it is not possible for Existing RLs to obtain End User confirmation within 3 Business Days as RLs may not have a direct relationship with the End User. We therefore submit that the entire Clause 20 be deleted. Should OpenNet continue to push this issue, we would propose that OpenNet instead abolishes its minimum contract term. Without a minimum contract term, RLs will automatically terminate the unused fibre, and therefore free up fibre capacity. This will also ensure that contractual terms between RLs and RSPs are not interfered with by OpenNet, and also minimises the risk of service disruptions.
SCHEDULE 2 (NON-RESIDENTIAL END-USER CONNECTION)	
Clause 4.4(a)	OpenNet should be liable for delays arising from access issues from buildings which it uses for "spring-boarding". OpenNet chose to deploy its network using spring-boarding despite the risks associated with it, and should

Relevant Provision of OpenNet ICO	NC's Comments
	not be allowed to absolve its responsibility when problems arise due to its rollout decisions.
Clause 4.6	It is unclear why there is a need for "specific requirements to the switching process". OpenNet should be required to specify such requirements upfront. Clearly, any competent operator should be able to provide a SLA for such switching services which is likely to entail only patching at the serving cabinet (where the RL's OE equipment is located). In order to minimise disruption, OpenNet should also be required to use the spare 2nd strand of fibre at the 1st TP for the switch. Once the switching is completed, the 1st strand of fibre can be "terminated". Further, there is also no reason why OpenNet needs to impose cost-oriented charges. OpenNet should either be required to specify its charges (if they are able to justify the need for such charges) upfront, or the entire paragraph should be deleted.
To insert new Clause 6A	Nucleus Connect submits that the process for installation-related faults found in Schedule 1 Clause 6A Joint Investigation of Faults is also relevant to Schedule 2 as there have been cases where no signal/low signal is encountered at the TP during ONT-installation. We therefore propose that a new clause 6A for Joint Investigation of Faults, similar to that found in Schedule 1 be inserted.
Clause 8.1	Nucleus Connect submits that it is not practical to link the deactivation of a EUC with a need to submit a Patching Service Deactivation request as the RL will not have any knowledge of the locations or number of patches affected.

Relevant Provision of OpenNet ICO	NC's Comments
Clause 11.17	It is unclear how this compensation regime would work. Nucleus Connect therefore requests that OpenNet provide examples of how the compensation is computed so as to avoid disputes in future.
Clause 18.2	For clarity, this clause should be modified to state that OpenNet will stop billing the RL for services at the former premises when the services at the new premises are activated i.e. no double billing.
Clause 20.2	For clarity, this clause should be modified to be consistent with Clause 6.7 which states OpenNet will provide the necessary Patching Service at OpenNet's FDF in the Building MDF Room.
SCHEDULE 3 (NBAP CONNECTION)	
Clause 1	The restriction to only the MDF Room of a Non-residential Building should be removed. There is no reason that an NBAP service cannot be provided from a Residential Building MDF Room.
Clause 3.3	It is unclear why RLs who deploy their own NBAP TP need to furnish reports to OpenNet. As RLs are responsible to secure access to the NBAP sites, as well as for the TPs there is no reason for OpenNet to require such information. OpenNet's responsibility is to provide its service to the handover point, and should not be allowed to interfere with the way an RL chooses to deploy its network, or make it burdensome for RLs to implement self-installation. The need to furnish reports to OpenNet should be deleted.

Further, there is no reason why a RL has to follow the process as described in Annex 3E for a simple scenario of accessing the NBAP Connection at the NBAP Node. There |

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	is no reason why there is a need to incur additional installation charge for the NBAP Node when the RL is already paying a higher recurring NBAP EUC charge ($185). In addition, there is no trenching or digging required from OpenNet as the NBAP Node is located at the existing FTTB Node or Building MDF that is already building reached. Clause 5.4 should also be modified accordingly. The main reason why a RL will take up the responsibility of self-building the NBAP TP is to enable it to have better control of lead times and costs since the fibre handover is in a building reached location. Such lead times and costs should not be any different from that of a Non-Residential EUC (Schedule 2). OpenNet should also have a fixed project study cost for such request since OpenNet can process such requests in the same manner in which it processes requests for Non-Residential EUC (RL self-provide 1st TP).
Clause 4.3	The phrase "other required details" after GPS coordinates is ambiguous, and OpenNet can rely on such ambiguity to delay the provision of services. OpenNet should be required to clearly specify the information it requires, and also the circumstances under which it may require additional information.
Clause 4.5	It is unclear why there is a need for "specific requirements to the switching process". OpenNet should be required to specify such requirements upfront.

Clearly, any competent operator should be able to provide a SLA for such switching services which is likely to entail only patching at the serving cabinet (where the RL's OE equipment is located).

In order to minimise disruption, OpenNet should also be required to use the spare 2nd strand of fibre at the 1st TP |

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	for the switch. Once the switching is completed, the 1st strand of fibre can be "terminated".
	Further, there is also no reason why OpenNet needs to impose cost-oriented charges. OpenNet should either be required to specify its charges (if they are able to justify the need for such charges) upfront, or the entire paragraph should be deleted.
Clause 5.2	Please refer to comments in Schedule 1.
	In addition, we would submit that NBAPs should not fall within the normal quota. NBAPs are usually undertaken on a project basis which allows OpenNet to have sufficient time to secure the required resources.
Clause 5.3(e)	Technical problems faced by OpenNet with its Platform should not constitute a reason for rejection. This clause should be deleted.
Clause 5.4	As stated above, NBAPs requests should not count towards the Maximum Quota since NBAP's are undertaken on a project basis. The reference to clause 5.2 should therefore be deleted.
	Further OpenNet should be required to provide a remedy to compensate the RL in the event it takes more than 20 Business Days to complete the Project Study.
Clause 5.4(c)	Buildings which OpenNet use for spring-boarding its network should not be a reason for rejection. It was OpenNet's decision to choose spring-boarding as its network design despite being aware of the associated risks.
Clause 5.10	Nucleus Connect submits that a 90 Business Day SAP is too long, as it amounts to more than 4 calendar months. The SAP for NBAPs should be no more than 30 Calendar

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	Days, or any other timeframe mutually agreed with the RL in accordance with the project requirements. Further, based on Nucleus Connect's experience, OpenNet tends to only provide a lump sum cost for material and a lump sum for "construction and project management". Such breakdown is not sufficient for RLs to determine whether such costs are reasonable. This clause should be modified such that the breakdown of the charge components should not be lump sum. For example, construction costs should be separated from project management costs. Digging, trenching, scaffolding, special trunking or overtime should be itemised on their own. As the project study will be reviewed with the RSP/End User, clarity on the cost items allow RL/RSP/End User to make decisions more expediently, and if necessary, to request OpenNet for amendments to the scope of work.
Clause 7.2	This clause should be modified to address situations where a RL elects to self-install the NBAP TP.
Annex 3D	There is no justification for requiring RLs to submit such a report to OpenNet. OpenNet is simply making it burdensome for RLs. This Annex should be deleted.
Annex 3E Clause 2.2	It is unclear what OpenNet means by "an order including the proposal in format specified in Annex 3A". OpenNet must specify what information it requires and whether Annex 3A would suffice. If it requires more information, then Annex 3A should be modified accordingly. Such ambiguity should not be allowed as it will enable OpenNet to delay the provision of services. The statement "ON reserves the right to reject the Request for NBAP Connection" should be deleted or OpenNet must provide circumstances under which it would reject a Request.

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	The phrase "Depending on ON's absolute discretion" should be deleted as it allows OpenNet to be discriminatory in its treatment. Instead OpenNet should specify the circumstances under which it would require a fresh proposal to be submitted.
Annex 3E Clause 2.3	Please refer to our comments above regarding an "NBAP Order with proposal in the format specified in Annex 3A".
Annex 3E Clause 2.5	In other Schedules, OpenNet expects RLs to render assistance to access buildings at no cost. OpenNet should similarly be required to render the same assistance at no cost to RLs in this instance.
Annex 3E Clause 2.6	Such a report should only be applicable insofar as the interconnection point between the RLs network and OpenNet's network, and should not extend to the TP or other parts of the network. It should also only be applicable where RLs have carried out work that require physical contact with OpenNet's network, and where such work is carried without OpenNet's presence, or by OpenNet's representatives.
Annex 3E Clause 2.7	Please refer to our comments in regard to Annex 3D above.
Annex 3E Clause 2.8	It is unreasonable to restrict each NBAP TP to only one End User. OpenNet should not be allowed to interfere with the commercial operations of its RLs. RLs should be allowed to package their services to meet the needs and demands of its downstream customers. Allowing OpenNet to impose such a condition will render the NBAP service uncompetitive. Further, the definition of NBAP Dark Fibre is unclear, as is

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	the intent of clause 2.8.4.
Annex 3E Clause 3.1	The date when the NBAP Node is available should be mutually agreed with RLs since it should coincide with the Digging and Trenching Work carried out by the RL. Further, since OpenNet has clearly stated that its risks and responsibility ends at the NBAP Node from the CO, OpenNet should not be allowed to impose any terms and conditions on other parts of the network which it has absolved itself from responsibility, as it has attempted to do throughout this Annex 3E.
Annex 3E Clause 3.3	Similar to our comments above, OpenNet should not be allowed to impose terms and conditions for other parts of the network which it has absolved itself from responsibility.
SCHEDULE 4 (CO TO CO CONNECTION)	
Clause 6.7	We would request that IDA re-considers its decision to allow OpenNet to impose a charge for optical power readings. This is not in accordance with industry practice. The provision of optical power readings is part of the commissioning process which is provided free of charge in current industry practice. There is no reason for a next generation network to deviate from this practice.
SCHEDULE 12 (CO-LOCATION SERVICE)	
General	Nucleus Connect submits that OpenNet should be required to provide an SLA for availability of power given that any power failure at its COs can have a large impact on the availability of services on the Next Gen NBN.
Clause 7.5	It is unreasonable to expect RLs to provide a forecast unless OpenNet can provide certainty over the usage of splitters. Based on the current low fill ratio situation, RLs

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	are not able to predict when OpenNet will utilise another splitter (and therefore require the use of another port). Unless OpenNet can provide some form of certainty, it cannot expect RLs to provide it with a forecast as the uncertainty is caused by OpenNet. Nucleus Connect also submits that the 2-month timeframe proposed by OpenNet is too long. As IDA has rightly pointed out the co-location space is controlled by OpenNet, and OpenNet has no reason not to manage its Transmission Tie Cable inventory efficiently. Nucleus Connect submits that a 30 Calendar Day timeframe would be reasonable. Should a new cable tray be needed, the timeframe can be 60 Calendar Days.
Annex 12D, clause 1.5.3	We note that IDA has not required OpenNet to increase its air-conditioning capacity to provide a minimum heat load limit of 3kVA which is in accordance with industry standards. It would appear that IDA accepts that the Next Gen NBN need not have higher standards than those offered by incumbent networks, despite funding OpenNet to the tune to $750m. We request that IDA re-considers its position.
Schedule 13 (Patching Service)	
Clause 3.1	With reference to section 2 of the Explanatory Memo, IDA has required OpenNet to remove its charges for deactivating of the patching service, with the exception charging for patch removal for relocation to another premises. Therefore, this clause should be modified to clearly show that deactivation of an EUC does not incur the patching charge. The form for PSDR should be modified such that the Order Reference ID (ORI) should be used instead of technical info such as Connector Ports and OpenNet FDF (which RL may not be aware of).

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Schedule 14 (OSS/BSS Connection and Professional Service	
Clause 2.1 (a) (i)	We note that IDA did not accept Nucleus Connect's comment on this Clause previously. However, we would urge IDA to re-consider our request as there are serious implications to OpenNet's proposal. We repeat our comments below: 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. Not forgetting inoperability issues between VPN clients and firewall and the overall cost for RL to support such connection. RL should be allowed to continue connection via the internet as per current mechanism.
Clause 9.6	The No Fault Found charge should be deleted. The steps proposed cannot exclude the scenario where OpenNet could have rectified the issues on their end prior to carrying out the test. To-date, there have been many cases where there are errors over B2B due to OpenNet's system. The proposed steps may not arise solely from problems with the connectivity, and there could be other reasons, besides connectivity which lead to occurrence of problems. Therefore simply conducting a connectivity test and concluding that the system works and therefore a NFF charge is applicable, will not solve the problem, and will be unfair to RLs. Finally, there is no reason for RLs to frivolously raise a fault on a live B2B connection with OpenNet, and therefore deterrence

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	with NFF is unnecessary.
Clause 10.1	OpenNet's system should be resilient and not susceptible to damage by external systems. RLs cannot be liable for OpenNet's inability to protect, or lack of protection for its own system. Otherwise, if OpenNet's system causes the same problems to RL's systems, reciprocally, RLs must be allowed to similarly claim against OpenNet.

We would note that in clause 9.1, OpenNet accepts no liability for faults on its systems.

We note that IDA did not take in our comments on this clause previously, and request that IDA re-considers its position. At a minimum, this clause should be reciprocal since OpenNet's systems can also possibly damage the RL's systems. We would note that this is a B2B system where both systems are interacting with each other and information is sent both ways, and not just from RLs to OpenNet. Therefore, if OpenNet seeks protection from RLs, then it should similarly offer the same protection to its interconnecting RLs. |
SCHEDULE 15 (CHARGES)	
General	We note that there is no specific patching charge for switching from GPON to OE or vice versa. Also IDA should review the patching charge at MDF room as it is very high compared to the revenue margin of OpenNet's downstream customers. Further we would note that the removal and activation of patch takes place at the same location/time and therefore should not attract a double charge.
General	OpenNet should be required to impose a fixed charge for Project Study since there is no reason for the charge to vary based on the scope of work that OpenNet will

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	do.
Clause 3.3	As Digging/Trenching/Scaffolding/Special trunking or Overtime work are charged on a Cost-oriented basis, OpenNet must provide a comprehensive breakdown for each item so that RL can determine if the costs are reasonable.
SCHEDULE 17 (DISPUTE RESOLUTION)	
General	Schedule 17 ought to be amended such parties should only proceed to arbitration if both parties are agreeable. If either party is not agreeable to arbitrate, the dispute ought to be submitted to the exclusive jurisdiction of the Singapore courts.

4. Conclusion

Nucleus Connect appreciates the opportunity to comment on the proposed modifications to OpenNet's ICO. We note that IDA has not taken in some of the proposals provided by Nucleus Connect to the first round of consultation, and urge IDA to re-consider its position and/or explain the reasons for its decision.