

EXPLANATORY MEMORANDUM

1. This Explanatory Memorandum explains the Direction dated 3 July 2009, issued by the Info-communications Development Authority of Singapore (“**IDA**”) to OpenNet Pte Ltd (“**OpenNet**”), directing it to:-
 - a. incorporate modifications to its proposed NetCo Interconnection Offer (“**ICO**”); and
 - b. if requested by any NetCo Qualifying Person (“**NetCo QP**”) who is a Facilities Based Operator (“**FBO**”), negotiate a Customised Agreement in good faith with such NetCo QP to allow it to access the various Connectivity Points in OpenNet’s Network for the purpose of deploying its own telecommunication cables to interconnect with OpenNet’s Network at such Connectivity Points.
2. Unless the context requires otherwise, all capitalised terms used in this Explanatory Memorandum shall have the same meanings as in the ICO (including Schedule 18 – Dictionary).

Background

3. The Code requires the ICO to contain a comprehensive and complete written statement of IDA-approved prices, terms and conditions upon which OpenNet will provide Services (i.e. Mandated Services and/or Ancillary Mandated Services) to NetCo QPs. The ICO is a standard document that is modular and sufficiently detailed to enable a NetCo QP that is willing to accept the ICO prices, terms and conditions, to obtain Services from OpenNet, by accepting the ICO¹.
4. To ensure that the ICO is aligned with the Code and the underlying purposes of the Next Generation National Broadband Network (the “**NGNBN**”, hereinafter also referred to as the “**Network**”), IDA issued a consultation paper titled, “Proposed Interconnection Offer and Model Confidentiality Agreement for the Provision of Services on the Next Generation National Broadband Network” on 25 February 2009, for the public to comment on OpenNet’s ICO. At the close of the public consultation on 9 April 2009, IDA received comments from 3 respondents (namely, BT Singapore Pte Ltd, MobileOne Ltd and StarHub Ltd). IDA expresses its appreciation for the comments received.

¹ Upon which the NetCo QP will be known as a Requesting Licensee (“**RL**”).

Scope of this ICO review

5. In considering the comments received from the public consultation, IDA reviewed the ICO terms and conditions to determine whether they:-
 - a. satisfy the Minimum Requirements for ICO specified in the Code;
 - b. satisfy the minimum duties for interconnection agreements specified in Section 5 of the Code of Practice for Competition in the Provision of Telecommunication Services 2005 ("**Telecom Competition Code 2005**"); and
 - c. serve the public interest.

6. In determining the above and in particular, whether the public interest is served by the ICO terms and conditions, IDA was guided by the following principles:-
 - a. IDA reviewed the ICO, having regard to the comments received, to ensure that its terms and conditions are reasonable and fair, promote the principles of the Code, and are both efficient and effective for the provisioning of Services to the RLs. In striking a balance between the sometimes competing interests of OpenNet and the RLs, IDA was cognisant of the RLs' need for contractual certainty in obtaining Services from OpenNet on efficient, effective, fair and reasonable terms so as to enable the RLs to provide services to their customers. On the other hand, IDA also recognised that OpenNet should only be subject to obligations that are practicable and feasible, and in the absence of compelling policy concerns, IDA does not intend to impose obligations on OpenNet that would materially impair OpenNet's commercial operations;
 - b. Where the industry commented on the terms and conditions of the ICO, IDA carefully considered whether these comments were reasonable, fair and promoted an efficient and effective implementation of the ICO and were consistent with the Code. Where IDA determined that the comments met these requirements, IDA then reviewed the proposed approach under the ICO, to determine if any modification was required. Where so required, IDA has made annotations to the ICO (including its Schedules), requiring OpenNet to make the necessary modifications. To the extent that comments received went beyond the intended purpose of the public consultation as set out in paragraph 4 above, IDA will not act upon these comments. In this respect, the industry will note that IDA is not requiring any modification to the Charges imposed under the ICO, which were not subject to public consultation;

- c. The NGNBN will be a ubiquitous network which promises to act as a strategic enabler for Singapore to exploit new economic opportunities in this digital age. To ensure that the NGNBN delivers on its promises, IDA will subject OpenNet to all necessary regulation and review. However, IDA has to draw a balance between exercising regulatory oversight and being too interventionist, which may stifle the development of the NGNBN. Hence, IDA has reviewed the industry comments and the ICO with a view to guiding the NGNBN to maturity. Notwithstanding, IDA will not hesitate to intervene whenever, wherever and howsoever necessary so as to ensure that the ICO fully promotes IDA's policy objectives of driving the NGNBN and public interest;
 - d. The ICO was drafted by OpenNet based on its bid submission in response to IDA's Request-For-Proposal ("**RFP**") for the creation of a Network Company ("**NetCo**"). The bid submission was subject to IDA's evaluation in a competitive bidding process, and it was found that OpenNet's bid submission, taken in its totality, was the most competitive and attractive in terms of its overall prices, processes, timelines and conditions. While IDA has retained its full authority and discretion under the RFP and Contract (as defined in the Code) to exercise all regulatory powers in relation to OpenNet, IDA has nevertheless taken a contextual approach in reviewing industry comments to ensure that the obligations imposed on OpenNet are appropriate and reasonable within the overall framework of the RFP and OpenNet's bid submission; and
 - e. IDA clarifies that the ICO is not a document that is intended to be cast in stone. As IDA, OpenNet and the industry acquire experience in implementing the ICO, IDA intends to regularly review its prices, terms and conditions to ensure that the ICO continues to be a model offer that is efficient, effective, fair and reasonable, and fully maintains its relevance in promoting IDA's policy objectives and the public interest. At a minimum, IDA intends to conduct a comprehensive review of the ICO once every three (3) years.
7. This Explanatory Memorandum clarifies IDA's position with respect to certain broad issues identified by IDA or raised by the industry. In relation to the modifications that IDA is directing OpenNet to incorporate into its ICO, these are set out in the appendices to the Direction. IDA's specific requirements applicable to each schedule of the ICO are set out as annotations in the relevant schedule (see appendices 1 to 18 of the Direction).

8. For the avoidance of doubt, IDA at all times reserves its rights to review and require changes to the ICO, in exercise of its statutory and regulatory powers, functions and duties, as IDA deems fit.

General Issues

ICO Framework

At the outset, IDA would like to address certain misconceptions that the respondents appear to have regarding the ICO framework.

Purpose of the ICO and its Relationship with the Customised Agreement

9. The ICO has been created to be a standard model offer approved by IDA, based on prices, terms and conditions which IDA assesses to be fair and reasonable. The ICO therefore enables a NetCo QP, who is willing to accept OpenNet's reference offer of prices, terms and conditions, to efficiently obtain Services without the need for any further negotiations. Once the NetCo QP submits its Notice of Acceptance of the ICO ("**NOA**"), OpenNet and the NetCo QP will be bound to the prices, terms and conditions of the ICO Agreement, including the Schedules applicable to the Services requested for by the NetCo QP.
10. Nevertheless, NetCo QPs are not obliged to enter into the ICO if, in their opinion, their unique circumstances are better served by an agreement with OpenNet on prices, terms and conditions that differ from those in the ICO. As provided for in Section 6 of the Code, a NetCo QP retains the ability to negotiate Customised Agreements for the incorporation of prices, terms and conditions that reflect its particular needs. Such Customised Agreements can deviate from the prices, terms and conditions of the ICO, provided they comply with the requirements of the Code (e.g. the Customised Agreement does not unreasonably discriminate against any other NetCo QP and the terms of the Customised Agreement are approved by IDA).
11. Therefore, IDA rejects industry comments that the ICO is inflexible, and that IDA is being rigid by creating a standard agreement that dictates fixed prices, terms and conditions. In IDA's opinion, it is not possible for any regulator to create a standard model offer document that can contemplate all myriads of situations or service needs.

Purpose of the Code and its Relationship with the ICO

12. IDA will also take this opportunity to explain the intended application of the Code vis-à-vis the ICO. The Code is a regulatory document that applies to both OpenNet and the NetCo QPs, and such parties must comply with the provisions therein. More specifically, the Code specifies the pricing, terms and conditions of the Services offered by

OpenNet for access and connectivity to its Network, the obligations and responsibilities of the Parties in relation to the Services, the obligations and responsibilities of NetCo QPs in relation to their take-up of such Services, and any enforcement measures that IDA may take against either Party for contravention of the Code. On the other hand, the ICO is a standard offer developed by OpenNet in compliance with its obligations under the Code. Therefore, in the Parties' enforcement and implementation of their rights and obligations under the ICO, they must observe and comply with all the applicable requirements of the Code.

OpenNet's Relationship with Singapore Telecommunications Limited ("SingTel")

13. In its review of the industry's comments as a whole, IDA notes a common misconception concerning OpenNet and SingTel. For example, one respondent has suggested that there is a possible conflict of interest between OpenNet and SingTel because "*on the one hand [OpenNet's] main competitor at the retail level is SingTel and on the other hand the monopoly provider of all customer connections to OpenNet is also SingTel*". The respondent also suggested that SingTel "*naturally as the monopoly provider both in its own right and through the sole sub-contractor provisioning of all fibre access for the NGNBN will serve its monopoly interests best through practices that overtly or covertly prevent the development of effective and sustainable competition*".
14. IDA would like to dispel these misconceptions. There are sufficient safeguards in place to minimise the possibility of any party being able to influence OpenNet's management and commercial decisions, in a manner that would be detrimental to competition in the Singapore telecommunication market. For example, under the terms of the NetCo NGNBN award, OpenNet must comply with the strict standard of structural separation, which includes the requirement that:-
 - a. OpenNet must not exercise effective control over any other telecommunication licensee or broadcasting licensee; and
 - b. OpenNet must not be subject to the effective control of any other telecommunication licensee or broadcasting licensee.
15. Hence, OpenNet is strictly prohibited from allowing its management and major operating decisions to be controlled by any party, including SingTel. There are also adequate safeguards in the contractual and regulatory framework governing OpenNet to ensure that the objective of an effective open access NGNBN is not compromised by the actions of its contractors. Without detracting from the foregoing, IDA will continue to vigilantly monitor and be alert to acts of anti-competitive behaviour by any of its licensees, including OpenNet and

SingTel. Where necessary, IDA will not hesitate to take strong enforcement action against the relevant parties.

The ICO Compared with SingTel's Reference Interconnection Offer ("RIO")

16. IDA also notes that some respondents have compared the ICO to the RIO in numerous instances. IDA wishes to clarify that even though the RIO is an example of a standard offer approved by IDA, for the provision of telecommunication facilities and services to service providers, the underlying basis of the RIO and ICO differs materially. The RIO and the ICO are administered by completely separate infrastructure providers who are providing services under completely different contexts and environments. The RIO is administered by SingTel as the incumbent dominant licensee on whom IDA has imposed a regulatory obligation to provide Interconnection Related Services to its competitors, which if left to market forces, SingTel may not so provide. This is to ensure any-to-any connectivity and effective competition in the Singapore telecommunication market. On the other hand, the ICO represents a standard offer by OpenNet, to whom IDA has awarded via a competitive tender bid process, to construct the Network and provide infrastructure services to NetCo QPs, in compliance with the Code. Therefore, comments relating to the conditions and implementation of the RIO are not necessarily relevant or appropriate to this ICO, and IDA has been circumspect where respondents have commented on the ICO by comparing it to the RIO.

Deployment of Own Cables to Various Connectivity Points in OpenNet's Network

17. The industry has commented that NetCo QPs should be allowed to deploy their own cables into the OpenNet Central Office ("**CO**"), as "*OpenNet should not be allowed to create any "monopolistic" situation limiting access or service provision which is against the spirit of Open Access and Competition*".
18. In this respect, IDA refers to paragraph 5(d) of the Direction requiring OpenNet, where it is requested by any NetCo QP who is a FBO, to negotiate a Customised Agreement in good faith with such NetCo QP to allow it to access Connectivity Points in OpenNet's Network for the purpose of deploying its own telecommunication cables to interconnect with OpenNet's Network.
19. As set out in Sub-section 1.5.2 of the Telecom Competition Code 2005, IDA highlights the importance of effective and sustainable competition and ensuring inter-operability and reasonable access to networks to prevent impediments to effective competition and market growth. In this respect, IDA's policy objective is to ensure interconnection with, and open access to the NGNBN. Accordingly,

IDA considers it necessary that FBOs should be allowed to have choices in the manner in which they access OpenNet's Layer 1 Services.

20. With regard to OpenNet's obligation to allow FBOs access to its infrastructure and IDA's right to require the same, the following provisions apply:-
- a. Section 6.1 of the Minimum Requirements of ICO (Appendix 1 to the Code) which requires OpenNet to offer access to its infrastructure at various Connectivity Points²;
 - b. Condition 16 of OpenNet's Licence which requires OpenNet to provide any person specified in Schedule C of its Licence means of access to its Systems, and to comply with IDA's interconnection & access framework, arrangements and requirements³; and
 - c. OpenNet's Dominant Licensee obligations under the Section 6 of the Telecom Competition Code 2005, pursuant to which IDA may specify the Interconnection Related Services that OpenNet must offer, in addition to the services offered under the ICO.
21. In IDA's view, notwithstanding that the NGNBN will be an ubiquitous network, this should not preclude the possibility or incentive for FBOs to continue to deploy their own networks where it is feasible for them to do so. IDA considers that the public interest would be served if FBOs engage in facilities-based competition amongst themselves to utilise the NGNBN in the most effective and efficient manner possible to deliver best outcomes for consumers.

² Section 6 of the Minimum Requirements of ICO states as follows:-

6. Connectivity Points

6.1 The ICO shall state that access to the Licensee's infrastructure will be offered at any technically feasible Connectivity Point in order to access Mandated Services provided by the Licensee. At a minimum, the Licensee shall offer to allow interconnection at the following Connectivity Points:-

- (a) MDFs at the CO;
- (b) DFs at TERs/MDF Rooms of Residential Premises and Non-Residential Premises;
- (c) 1st TPs of Non-Residential Premises and Residential Premises; and
- (d) any other Connectivity Points that the Licensee may propose.

³ Condition 16 of OpenNet's Licence states as follows:-

16. Requirement to Provide Access

16.1 The Licensee shall provide to any person specified in Schedule C means of access to the Systems.

16.2 The Licensee may, with the prior approval of IDA, impose an access charge upon any person specified in Schedule C.

16.3 The Licensee shall comply with IDA's interconnection & access framework, arrangements and requirements, including all relevant Codes of Practice, directions and notifications which IDA may issue from time to time.

22. Following from the above, IDA considers that OpenNet should allow for NetCo QPs to have the option of deploying their own telecommunication cables to access OpenNet's Layer 1 Services at the various Connectivity Points in OpenNet's Network, including OpenNet's CO. Nevertheless, IDA notes a NetCo QP already has the option of leasing OpenNet's segment services, e.g. CO to Building MDF Room Connection under the ICO for access to OpenNet's CO, as an alternative to deploying their own telecommunication cables. In this regard, IDA will not require OpenNet to provide a service offering for such access in its ICO (without prejudice to IDA's right to do so in the future). Instead, OpenNet shall be required to negotiate in good faith a Customised Agreement with any NetCo QP who seeks to deploy its own telecommunication cables to Connectivity Points in OpenNet's Network in order to access the Layer 1 Services provided by OpenNet. The procedure for such Customised Agreements shall be as specified in Section 6 of the Code, subject to appropriate modifications to exclude references to the ICO.

Validity Period of the ICO

23. One respondent commented that the time period for the ICO to be in effect should be three (3) years instead of twenty-five (25) years, in accordance with Clause 10.1(a) of the Code.
24. The respondent's concern about the twenty-five (25) years time period of the ICO is misplaced. The duration period of the ICO, i.e. twenty five (25) years, does not preclude the ICO from being reviewed in accordance with the Code. For the avoidance of doubt, IDA fully intends to regularly review the prices, terms and conditions of the ICO, to ensure that the ICO remains relevant, fair, reasonable and non-discriminatory, especially in light of any changing circumstances. In fact, it remains IDA's intention to review the ICO every three (3) years, to ensure that the ICO continues to further IDA's policy objectives, and adequately meet the industry's requirements. Where any price, term or condition has been modified arising from a review, the modification will be applicable to the ICO and all existing ICO agreements will be amended to henceforth incorporate such modification.

Exclusivity Period for OpCo

25. The industry should note that there is an exclusivity period where OpenNet will only be permitted to offer the Services to the NGNBN Operating Company ("**OpCo**"). IDA will, in due course, provide the industry with information on when this exclusivity period will expire.

Liability for Costs and Expenses

26. One respondent has commented that where the ICO requires the costs and expenses incurred by one Party to be borne by the other Party, such an obligation should apply only to costs and expenses that are both reasonable in quantum and reasonably incurred. IDA broadly agrees with this comment and that all provisions in the ICO imposing obligations on one Party to pay the costs and expenses of the other Party, should be modified to take into account the reasonableness of the cost or expense and its incurrence.

Exclusion of Liability for Consequential or Indirect Losses

27. One respondent has suggested that clause 14.3 of the ICO, which excludes liability for loss of profits, revenue, business, anticipated savings, wasted expenditure and goodwill, should be limited to only indirect losses (i.e. parties should be liable for direct losses of the abovementioned natures). After careful consideration, IDA is of the view that the current drafting is reasonable under the present circumstances where the Services are offered pursuant to a standard offer. Nevertheless, a NetCo QP is free to negotiate a Customised Agreement with OpenNet should it wish to extend the scope for liability to direct losses.

Amendment and Variation to the ICO

28. One respondent has suggested the removal of clause 5.1 of the ICO (in Part 1 on Acceptance Procedures) because its current drafting suggests OpenNet has unfettered discretion to amend or withdraw the ICO, at any time. IDA assures the industry that this is not the intent of the clause and has required OpenNet to modify this clause to clarify that such amendments or withdrawals shall only come into effect with IDA's approval.

OpenNet's Obligation to Obtain IDA's Approval Prior to Suspension or Termination

29. IDA notes that the respondents share a common concern that based on the current drafting in the ICO, OpenNet has absolute discretion regarding suspension and immediate termination of Services under the ICO. IDA is well aware of the significance of the NGNBN to NetCo QPs, and that many are basing their business cases on the ability to gain ready access to the NGNBN. That the industry would wish IDA to exercise regulatory oversight is understandable.
30. With regard to this concern, IDA notes that OpenNet may unilaterally suspend or terminate Services under the ICO only upon meeting

certain specific terms and conditions. In addition, IDA would highlight that clauses 11.2 and 12.3 of the Main Body (in Part 2 of the ICO), further stipulate that suspension and termination of Schedules and ICO Agreements are effective only upon IDA's written approval. When determining whether the suspension or termination (as the case may be) is warranted, IDA will seek to uphold the principles underlying the ICO, to ensure the continued efficient provision of highly competitive NGNBN services in the public interest, taking into consideration the circumstances of each case where appropriate.

31. Notwithstanding, IDA accepts one respondent's suggestion that the suspended or terminated party (as the case may be), should be able to make written submissions to IDA. IDA welcomes such a suggestion, which may provide IDA with a more balanced understanding of the facts and circumstances of each case.
32. Having said that, in the interests of expediency and efficiency in provision of Services, IDA considers it counterproductive to exercise explicit regulatory oversight with regard to suspension and termination of licences under each Schedule, particularly when such suspension and termination are already subject to the satisfaction of specific conditions under the respective Schedules. In this regard, IDA considers it reasonable that the relevant clauses in the Schedules regarding suspension and termination of licences be amended to remove any need for IDA's prior approval. However, IDA reserves the right to re-impose the requirement of prior approval on OpenNet if it becomes aware of any abuse by OpenNet in respect of its suspension and termination of licences.

Imposition of Charges by OpenNet

33. Concerns were expressed with respect to the imposition of certain Charges by OpenNet under the ICO (as stated in Schedule 15 on Charges). One comment went as far as suggesting that a complete review of OpenNet's Charges was necessary.
34. As aforementioned, the scope of the public consultation conducted by IDA on 25 February 2009 explicitly excluded discussion regarding prices of the Services offered under the ICO. At this juncture, IDA does not contemplate reviewing the Charges, which were part of OpenNet's bid submission in response to IDA's RFP for the creation of the NetCo. The bid submission was subject to IDA's evaluation in a competitive bidding process, and the terms of OpenNet's bid submission (including the Charges), taken in its totality, was determined by IDA as the most competitive and attractive bid.
35. Notwithstanding, IDA assures the industry that IDA will conduct regular price reviews to ensure that these Charges remain relevant to

changes in circumstances, market conditions, and in line with IDA's stipulated pricing methodology.

36. Although the current Charges are fair and reasonable in the circumstances, IDA nevertheless is of the view that in certain instances, Charges should not be imposed on RLs. For example, IDA considers where the Charge is related to or in connection with the suspension of a Service, and such suspension arose because of OpenNet's fault, then it would be unreasonable and unfair if the RL has to bear the liability of this Charge.
37. Similarly, IDA is of the view that it would be unreasonable and unfair if the RL has to bear the liability of the reconnection of service Charge, in the event the suspension of the service was attributable to OpenNet's fault in the first place.
38. In the case of termination of licences under the Schedules, IDA notes that termination Charges and costs may arise from the following: (a) removal of Patching Services; (b) removal of RL's equipment; (c) reinstatement of the site; and (d) Monthly Recurring Charges for the remainder of the contract term (i.e. the premature termination charges).
39. With regard to the removal of Patching Services and reinstatement of site, IDA considers it fair and reasonable that the RL should not be made liable for such costs when the termination of the licence was the result of OpenNet's fault. However, RL would have to bear the costs of disconnecting, removing and/or disposing of its own equipment, since it is the RL's obligation to disconnect and remove its equipment upon termination (e.g. clause 16.8 of Schedule 3 (NBAP Connection)). Where a RL is being recalcitrant in fulfilling this obligation to disconnect and remove its own equipment, IDA is of the view that the RL should bear OpenNet's reasonable costs for such disconnection and removal.
40. With regard to premature termination charges, IDA's position is that unless the termination was the result of the RL's fault, the RL should not be liable to OpenNet for such charges. It is unfair to expect the RL to continue to pay Monthly Recurring Charges when the licence(s) under the Schedules has been terminated, through no fault of its own.
41. To this end, IDA has directed OpenNet, in its annotations to the ICO and Schedules, to modify the relevant clauses on suspension and termination, where applicable.

Ex-Gratia Rebates for Failure to Meet Service Level Guarantees

42. Two respondents have commented that it is insufficient for OpenNet to have only an "ex-gratia" obligation to provide rebates to the RL,

since OpenNet has a contractual obligation to provide rebates in the event OpenNet fails to meet the applicable Service Level Guarantees (the “**SLGs**”). One respondent has further suggested that “*the rebates provided by OpenNet are contractual rebates, akin to liquidated damages for failure to perform its obligations under the ICO Agreement. [Therefore] [t]he rebates are not given out of goodwill or on an ex-gratia basis*”.

43. IDA understands the industry’s concern but considers it unfounded. IDA understands “ex-gratia” rebates as being payments paid out by a defaulting party without any admission of liability. However, this does not mean that the obligation to make the ex-gratia payment is not legally binding: OpenNet is still bound under the ICO to pay the requisite rebates to the affected RLs as long as it fails to meet the requisite SLGs. Based on this understanding, IDA intends to retain the current use of “ex-gratia” by OpenNet to describe the SLGs rebates.

Timelines and Information for the Provisioning of Mandated Services (“**MSI**”)

44. One respondent has commented that the timelines proposed in the ICO are not realistic. It was suggested that because there are “multiple layers of service providers” contemplated in the NGNBN framework, a certain amount of response time is required for Parties to respond to events that impact the delivery of services to End-Users. IDA understands the respondent’s concern, and shares the respondent’s desire to have workable timelines for ordering and provisioning that are efficient and will effectively enable the RLs to create better services for End-Users.
45. In this respect, IDA has required OpenNet to improve the timelines, where relevant, to minimise any adverse impact on the quality of services provided by the RLs to the End-Users. However, IDA is mindful of the need to balance these objectives with the reality that the Network is new. As OpenNet and the RLs acquire experience regarding NGNBN service provisioning, IDA assures the industry that it will review these timelines with a view to improving the efficiency and effectiveness of all processes involved.
46. It was further commented that it would be necessary for OpenNet to also provide information such as its roll-out schedules and locations to NetCo QPs (or RLs, as the case may be), (a) prior to submitting a NOA, or (b) prior to RLs placing orders for Services, and that MSI should be made available in an easily accessible manner prior to the implementation of the OpenNet Platform (i.e. OSS/BSS Platform).
47. IDA agrees that NetCo QPs need certain preliminary information regarding the Services, before they can make an informed decision whether the Services are suitable for their purposes and whether they

should accept the ICO. Therefore, IDA considers it reasonable and necessary for OpenNet to provide the NetCo QP, upon its request, with basic information relating to the Network roll-out, its coverage in terms of premises reached and premises passed, as well as relevant information describing the processes and natures of the Services that the NetCo QP is considering. In addition, IDA agrees that relevant MSI should be provided in an easily accessible manner, and be made available online to NetCo QPs or RLs in the interim period before the OpenNet Platform is implemented.

48. Separately, IDA considers that more specific information will have to be provided to RLs subsequent to entering into the ICO Agreement with OpenNet. At a minimum, IDA requires OpenNet to provide the following as MSI:-
- a. List and description of the physical locations at which a RL may physically interconnect with the Network and the means by which interconnection may be achieved;
 - b. Information regarding the availability of Mandated Services, including the address of each CO, Residential and Non-Residential addresses, information on existing NBAPs, the geographical boundaries of the area served by each CO, the extent to which the access network is available at each Connectivity Point; and
 - c. Information related to any proposed demolition or re-construction of buildings in which OpenNet has rolled out to.

OpenNet Platform

49. Two respondents have commented that the present situation regarding the OpenNet Platform (i.e. OSS/BSS provisioning platform) is less than ideal. While an automated provisioning system is key to the effective and efficient processing of orders and provisioning of Services under the ICO, at present however, the OpenNet Platform has yet to be implemented and the ordering of Services will have to be done manually until such time that the platform is ready for operation. Therefore, the timeframe for replacement of the manual process with the OpenNet Platform should be shortened. With regard to the concern, on one hand, IDA understands the crucial role to be played by the OpenNet Platform and hence the need for it to be in place as soon as possible. On the other hand, given the likely complexities involved, the development of the OpenNet Platform should proceed carefully to ensure that the platform will be comprehensive and effective in meeting the industry's requirements. In this regard, IDA has required OpenNet to implement the OpenNet Platform within a reasonable period of time.

Closure of CO and Decommissioning of Co-Location Space

50. Two respondents have commented that OpenNet should be subject to stricter requirements in its decommissioning of COs, because decommissioning has serious consequences for RLs who have co-located at the affected COs. These respondents have suggested that such requirements should include the following, that OpenNet: (a) inform the affected RLs well in advance of its plans to decommission a CO; (b) offer the affected RLs an equivalent alternative Co-Location Space; and (c) bear its own costs with regard to the migration of the RL's Co-Location Equipment to the alternative venue (as well as the RL's costs, if any).
51. After careful consideration, IDA has concluded that OpenNet should be required to inform the affected RLs at least eighteen (18) months in advance for any decommissioning of OpenNet's COs. In terms of alternative Co-Location Space and the costs of such migration, IDA is of the view that the existing arrangement proposed is adequate. In other words, it is sufficient for OpenNet to provide assistance to look for alternatives and for each party to bear its own cost during such decommissioning of CO.
52. At all times, IDA's policy has been to ensure sustainable and effective competition in a fully liberalised telecommunication market. To achieve this, IDA needs to ensure that operators are not discouraged from building, innovating and/or upgrading their existing infrastructure. In this respect, IDA must allow the Network to evolve with newer technologies that will subsequently become available. For instance, it would not be in the public's interest to unduly restrict OpenNet's operational flexibility to reconfigure the Network, when the flexibility would allow consumers to have access to an improved and more efficient broadband network.
53. Nonetheless, IDA cannot ignore other important considerations, namely that the provision of Co-Location Services is a basic and critical aspect to the functionality and success of the Network, and in general, the NGNBN project. For RLs to provide adequate, effective and efficient services to their End-Users, they must be provided with sufficient visibility as to the availability of Co-Location Space and COs, to enable them to plan their network deployment and migration in the event of any decommissioning. Otherwise, any short-notice decommissioning of the COs and Co-Location Space may impose undue costs and be highly disruptive to the RLs' rollout plans and service provisioning. IDA also notes that NetCo QPs may similarly need the same degree of information and visibility as to the availability of Co-Location Space and COs, before they decide whether to submit an NOA to accept Services under the ICO.
54. Therefore, on balance, IDA views that the imposition of the following additional requirements on OpenNet on the decommissioning of COs

and Co-Location Space would be fair and reasonable: (a) OpenNet must maintain a list of its COs and Co-Location Space on a website that is readily available to all RLs and NetCo QPs; (b) when OpenNet intends to decommission any CO, it should update this list of COs and Co-Location Space, clearly stating which COs are being decommissioned ; and (c) such notice of decommissioning should be made at least eighteen (18) months prior to the date on which the relevant CO is to be decommissioned, subject to IDA stipulating a shorter timeframe. This timeframe is necessary to provide the RL with sufficient time to address and mitigate any potential adverse impact that may result from the decommissioning. Additionally, IDA would expect OpenNet to work with its main contractor for Co-Location Space, to ensure that information regarding decommissioning of COs is disseminated in an effective and timely manner. This may necessitate a modification to clause 1.4 of Schedule 12 (Co-Location Service) in the future.

55. Regarding the respondents' other comments on the burden of costs, IDA does not propose, at this time, to place additional migration and cost obligations on OpenNet. IDA is of the view that requiring OpenNet to bear the costs of migrating and relocating the RLs' Co-Location Equipment would be an onerous obligation. In particular, IDA does not want to unduly restrict OpenNet's flexibility to reconfigure its Network to take advantage of new technologies, and possibly cost savings that can be passed on to RLs and eventually, End-Users.
56. Moreover, IDA is also concerned that the RLs will have little incentive to minimise their migration costs if all such consequential costs are simply passed on to OpenNet, even though the incurrence of the costs are largely within the RLs' control. Moreover, the RL is a commercial entity that must be taken to be responsible for a certain amount of business and investment risks that are inherent in its commercial dealings. In this respect, it is only reasonable that the closure of a CO is within RLs' contemplated risk management.
57. Additionally, one respondent has commented that clause 3.6(d) of Schedule 12 should be removed and subsumed under clause 3.4. IDA agrees with the respondent that OpenNet should be able to determine, within one (1) Business Day of the Request Date, whether the Co-Location Request pertains to a CO that is or intended to be decommissioned. In this respect, IDA requires OpenNet to make the necessary modifications to clauses 3.6(d) and 3.4 of Schedule 12, for IDA's approval.

Provision of Redundancy Service by OpenNet

58. Two respondents have commented that the provision of Layer 1 Redundancy Service for any of the Services offered under the

relevant Schedules of the ICO should not be at OpenNet's discretion. It was also suggested that IDA should mandate OpenNet to provide both duct and path diversity for the Redundancy Service, and that it is unacceptable that this Service is provided only using the same duct along the same path.

59. IDA agrees with the respondents that the provision of Redundancy Service is essential. IDA wishes to make clear that OpenNet should not be refusing to provide Redundancy Services to a RL, except in the very limited situation where OpenNet finds itself unable to build the requisite infrastructure to provide the necessary Redundancy Service (e.g. there is no space to build the requisite ducts). IDA's position is premised on the fact that OpenNet is the NGNBN infrastructure provider and Redundancy Service is an essential service to every RL.
60. In fact, IDA is of the view that where such infrastructural limitations may be overcome (depending on the particular circumstances), OpenNet is to use reasonable endeavours to accede to RLs' request for Redundancy Service. Nonetheless, IDA understands that such infrastructural limitations are problems that OpenNet will face from time to time, and that RLs should not expect their request to be acceded to immediately. IDA considers OpenNet should devise a provisioning method by which OpenNet will provide notice to the RLs when it is faced with such infrastructural limitations, stating a reasonable time period within which OpenNet will use reasonable efforts to provide the necessary redundancy facilities to the RLs.
61. However, IDA will not be mandating OpenNet to provide duct and/or path diversity in its provision of Redundancy Service. IDA notes that it may not always be possible, due to network configurations or the aforementioned building limitations, for OpenNet to fulfil an obligation to provide duct and/or path diversity at an RL's request. In line with its review principles as stated above, IDA hesitates to impose an additional and possibly onerous burden on OpenNet. On a balance of interests and taking into consideration all factors, IDA considers that it should be up to the RL to seek a Customised Agreement if it considers it essential for its own particular purposes, that duct and/or path diversity be provided by OpenNet.

Conclusion

62. In conclusion, IDA assures the industry it will be subjecting the ICO prices, timelines, processes, terms and conditions to review from time to time, and that as the NGNBN matures, IDA will ensure the ICO continues to be relevant to the industry and the prevailing market conditions in Singapore.