

EXPLANATORY MEMORANDUM

1. This Explanatory Memorandum explains the Direction dated 8 December 2009, issued by the Info-communications Development Authority of Singapore (“**IDA**”) to Nucleus Connect Pte Ltd (“**Nucleus Connect**”), directing it to:
 - (a) incorporate modifications to its proposed Operating Company (“**OpCo**”) Interconnection Offer (“**ICO**”); and
 - (b) if requested by any OpCo Qualifying Person (“**OpCo QP**”), to negotiate a commercial agreement in good faith so as to allow the OpCo QP to access and deploy telecommunication cables into Nucleus Connect’s Central Offices (“**COs**”) for the purpose of obtaining Nucleus Connect’s services.
2. Unless the context requires otherwise, all capitalised terms used in this Explanatory Memorandum shall have the same meanings as in the ICO.

Background

3. The OpCo Interconnection Code 2009 (“**Code**”) requires the ICO to contain a comprehensive and complete written statement of IDA-approved prices, terms and conditions upon which Nucleus Connect will provide Services (i.e., Mandated Services and/or Ancillary Mandated Services) to OpCo QPs. The ICO is a standard document that is modular and sufficiently detailed to enable an OpCo QP that is willing to accept the ICO prices, terms and conditions, to obtain Services from Nucleus Connect, by accepting the ICO.
4. To ensure that the ICO is aligned with the Code and the underlying purposes of the Next Generation Nationwide 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 Nationwide Broadband Network – Operating Company” on 18 August 2009, for the industry to comment on Nucleus Connect’s ICO. At the close of the consultation on 29 September 2009, IDA received comments from 8 respondents (namely, BT Singapore Pte Ltd, MobileOne Ltd, NTT Singapore Pte Ltd, PacNet Internet (S) Ltd, Singapore Telecommunications Limited, StarHub Ltd, SuperInternet Access Pte Ltd and ZONE Telecom Pte Ltd). IDA expresses its appreciation for the comments received.

Scope of this ICO review

5. In considering the comments received from the consultation, IDA reviewed the ICO terms and conditions to determine whether they:
 - (a) satisfy the Minimum Requirements for the 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, it promotes the principles of the Code, and is both efficient and effective for the provisioning of Services to the OpCo QPs. In striking a balance between the sometimes competing interests of Nucleus Connect and the OpCo QPs, IDA was cognisant of the OpCo QPs' need for contractual certainty in obtaining Services from Nucleus Connect on efficient, effective, fair and reasonable terms so as to enable the OpCo QPs to provide services to their customers. On the other hand, IDA also recognised that Nucleus Connect 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 Nucleus Connect that would materially impair Nucleus Connect'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 Nucleus Connect to make any necessary modifications. To the extent that comments received went beyond the intended purpose of the 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 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 Nucleus Connect 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 Nucleus Connect based on its bid submission in response to IDA's Request-For-Proposal ("**RFP**") for the creation of an OpCo. The bid submission was subject to IDA's evaluation in a competitive process, and it was found that Nucleus Connect'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 Nucleus Connect, IDA has nevertheless taken a contextual approach in reviewing industry comments to ensure that the obligations imposed on Nucleus Connect are appropriate and reasonable within the overall framework of the RFP and Nucleus Connect's bid submission; and
 - (e) IDA also clarifies that the ICO is not a document that is intended to be cast in stone. As IDA, Nucleus Connect 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.
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 Nucleus Connect to incorporate into its ICO, these are set out in the attachments to the Direction. IDA's specific requirements applicable to each schedule of the ICO are set out as annotations in the relevant schedule (see attachments 1 to 15 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

Misconception of the OpCo ICO

At the outset, IDA would like to address certain misconceptions raised on the OpCo ICO.

9. One respondent had commented that there was a widely held belief that there will be “100Mbps residential internet access services offered at about \$20”. The respondent further added that the above was inaccurate as the said price did not take into account other costs (e.g., backend costs and trunk links) and that the base \$21 service does not actually offer 100Mbps but only 25Mbps downlink with a 10Mbps uplink.
10. IDA would like to clarify that while the \$21 service package was mentioned on various occasions¹, these references were made in the context of End-User connection services to be offered at the wholesale level by the OpCo (i.e., by the OpCo to the OpCo QPs). In subsequent engagement with the industry on the NGNBN services, IDA had made clear that in addition to these 100Mbps End-User connection services, which could range from \$21 upwards, there would be other services required, such as Provider Backbone Ethernet Virtual Connections (i.e., PB-EVCs) and QP Ethernet Virtual Private Line Service Ports (i.e., QP-EVPL Service Ports), which would add to the effective wholesale cost for the OpCo QPs. In relation to the bandwidth which OpCo QPs would receive, IDA would also like to clarify that Nucleus Connect’s ICO service offerings allow an OpCo QP to get up to the full 100Mbps with the bandwidth going no lower than the guaranteed minimum bandwidth of 25Mbps. That said, the OpCo QP can subscribe to additional guaranteed bandwidth, if it wishes to increase the minimum guaranteed rate beyond 25 Mbps.

ICO Framework

11. 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 an OpCo QP, who is willing to accept Nucleus Connect’s model offer of prices, terms and conditions, to efficiently obtain Services without the need for any further negotiations.
12. However, it is not likely for any regulator to create a standard model offer document that can contemplate all myriads of situations, or all possible service needs. Accordingly, IDA would like to highlight that

¹ IDA’s Press Release titled “Another Milestone Achieved in Singapore’s Nationwide Next Generation National Broadband Network With the Selection Of Proposal For OpCo RFP” dated 3 April 2009 and article in IDA’s monthly iN.SG publication titled “IDA selects StarHub’s Nucleus Connect as Next Gen NBN OpCo” dated 1 May 2009.

the OpCo QPs are not obliged to enter into the ICO if, in their opinion, their unique circumstances are better served by an agreement with Nucleus Connect on prices, terms and conditions that differ from those in the ICO. As provided for in Section 6 of the Code, an OpCo 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 (including without limitation, the requirement that the Customised Agreement does not unreasonably discriminate against any other OpCo QPs and the terms of the Customised Agreement are approved by IDA). In addition, IDA notes that the industry had requested Nucleus Connect to offer services which are currently not found in the ICO. For these new services, the industry could directly engage Nucleus Connect to discuss the possibility of Nucleus Connect offering such services.

Nucleus Connect's Contractors and/or Suppliers

13. There was general industry feedback received that Nucleus Connect should be accountable for faults, delays and defaults of its contractors and/or suppliers, including the NGNBN Network Company ("**NetCo**"). The industry was of the view that the relationship between Nucleus Connect and its contractors and/or suppliers should be transparent to the OpCo QPs. In addition, any claim made against Nucleus Connect by the OpCo QPs should not be contingent on whether Nucleus Connect had successfully made a claim against its contractors and/or suppliers.
14. Generally, IDA acknowledges the industry's comment that suppliers of telecommunication services should be made responsible for the actions of their contractors and/or suppliers. This is because in most typical commercial arrangements, one would expect such suppliers to have in place separate recourse or remedies against their own contractors and/or suppliers in the upstream agreements with its contractors and/or suppliers. However, IDA recognises that the situation between Nucleus Connect and one of its key suppliers, NGNBN NetCo, is unique as this relationship is governed by a standard offering that is premised on the terms and conditions of a competitive bid submitted by the NetCo to IDA. Moreover, IDA considers that at this early stage where the NGNBN is new and the industry is relatively unfamiliar with the Network, it is not reasonable to expect that the NetCo ICO would cover exhaustively all possible scenarios that might arise, and the rights and obligations associated with those scenarios. For example, there may be certain circumstances in which the NetCo commits an unforeseen default that is not currently provided for in the NetCo ICO. In such an instance, it would not be appropriate for the OpCo to have to automatically assume liability or responsibility under the OpCo ICO, since this was not even contemplated under the NetCo ICO.

15. In this regard, IDA considers that in situations where the fault, delay or default is caused by the NGNBN NetCo, IDA will only require Nucleus Connect to provide the applicable remedy (based on Nucleus Connect's remedy regime) to the affected OpCo QPs, as long as Nucleus Connect is entitled to a claim from the NGNBN NetCo. As for Nucleus Connect's other suppliers and/or contractors, IDA would require Nucleus Connect to be fully responsible for their faults, delays or defaults as it is conceivable for Nucleus Connect to be able to negotiate back-to-back agreements to cover its obligations towards its OpCo QPs.
16. Notwithstanding the above, IDA assures the industry that it will be subjecting the above to review from time to time, as the NGNBN matures, and the NGNBN NetCo and Nucleus Connect gain experience in operating the Network and managing the risks involved.

Information related to End-User Connection

17. Nucleus Connect had proposed to require the OpCo QPs to submit information in respect of any 100Mbps service packages which directly or indirectly utilised Nucleus Connect's Network ("**Relevant Service Package**"). Specifically, Nucleus Connect has required OpCo QPs to furnish a report, on a monthly basis, to state the number of Connections under each Relevant Service Package sold to each End-User during the month. The industry is generally concerned about the above requirement as such information is commercially sensitive and is not typically provided to wholesalers like Nucleus Connect.
18. IDA would like to clarify that the above information requested by Nucleus Connect was intended to be submitted to IDA (in accordance with Appendix 1, clause 2.4(i) of the Code). Notwithstanding, IDA notes the concerns raised by the industry and agrees that it might not be appropriate for a wholesaler, like Nucleus Connect, to obtain such commercially-sensitive information from its OpCo QPs. IDA would therefore require Nucleus Connect to modify its requirement such that the OpCo QPs submit such information directly to IDA instead.

Disclosure of Information to Nucleus Connect's Affiliated Operator

19. One industry member commented that Nucleus Connect is operationally separated and independent from its Affiliated Operators, and as such, there is no reason why Nucleus Connect would need to disclose Confidential Information to such Affiliated Operators. The industry member also cited a related comment (i.e., heightened need to increase the protection of commercially-sensitive information of the OpCo QP, given that a company affiliated/related to Nucleus Connect may be a retail service provider competing with the OpCo QP) raised

during the consultation of Nucleus Connect's Model Confidentiality Agreement ("**MCA**") in support of its concern.

20. While IDA notes the concern raised, IDA believes that there may be limited circumstances under which Nucleus Connect may need to disclose Confidential Information to its Affiliated Operators (e.g., consolidation of financial statements). Moreover, IDA considers that there are safeguards in place to limit the instances under which Nucleus Connect would reveal such information to its Affiliated Operators. These safeguards are provided for under the Operational Separation Requirements and in the OpCo RFP. In addition to the above, OpCo QPs will have legal recourse against Nucleus Connect under the OpCo ICO.

Deployment of Cables to Nucleus Connect's Network

21. The industry has commented that OpCo QPs should have the option of laying fibre into Nucleus Connect's COs for interconnecting with Nucleus Connect's Network, in order to access the services provided under the OpCo ICO. In addition, consistent with the Open Access policy, Facilities-Based Operators ("**FBOs**") should be allowed to have choices in the manner in which they access Nucleus Connect's COs.
22. 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.
23. IDA further notes that under Condition 16 of Nucleus Connect's Licence, Nucleus Connect is required 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 requirements².
24. Following from the above, IDA considers that Nucleus Connect should allow OpCo QPs to have choices, including the option of deploying their own fibre or to lease third party fibre (e.g., fibre segment from the NetCo) to access Nucleus Connect's services at Nucleus Connect's COs. Nevertheless, as the OpCo QPs already have the option of leasing bandwidth services from Nucleus Connect, under the OpCo ICO, to bring the traffic back to their respective data centres, IDA will

² Condition 16 of Nucleus Connect'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.

not require Nucleus Connect to provide such access in its ICO (without prejudice to IDA's right to do so in the future). Instead, Nucleus Connect shall be required to negotiate, in good faith, a commercial agreement with any OpCo QP who seeks the option of accessing Nucleus Connect's COs to deploy telecommunication cables to interconnect with Nucleus Connect's Network in order to access the services provided by Nucleus Connect.

25. In this respect, IDA refers to paragraph 5 of the Direction requiring Nucleus Connect, where it is requested by any OpCo QPs to negotiate a commercial agreement, in good faith, with such OpCo QP to allow it to access Nucleus Connect's Network for the purpose of deploying telecommunication cables to interconnect with Nucleus Connect's Network.

Resale of NGNBN NetCo Services

26. One respondent has commented that the Nucleus Connect ICO should cover the resale of the NGNBN NetCo services. IDA would like to clarify that during the period where NGNBN NetCo will only be permitted to offer its Services to Nucleus Connect, Nucleus Connect will resell NGNBN NetCo services to NGNBN NetCo QPs on a commercial basis but this will not form part of Nucleus Connect's ICO.

Unilateral Suspension or Termination of Nucleus Connect ICO

27. IDA notes that the respondents have indicated concerns over the drafting and processes related to suspension and immediate termination of Services under the ICO. The industry's concern is not unfounded since any such suspension and termination would be severely disruptive to the OpCo QPs and their End-Users.
28. With regard to this concern, IDA will be requiring Nucleus Connect to make modifications to its clauses to further clarify the context and limit the extent under which suspension and immediate termination would occur. Similar to the position adopted for NGNBN NetCo's ICO, IDA agrees with one respondent's suggestion to incorporate a process whereby the suspended or terminated party (as the case may be), should be able to make written submissions to IDA during such situations.
29. One respondent has also expressed concerns over the automatic termination of a Service Schedule when an OpCo QP, who had previously obtained the services under the Service Schedule, has ceased to have any active service under the Schedule. IDA has reviewed the above arrangement and does not see any real concern. In a vibrant market environment envisaged under the NGNBN, the take-up of OpCo's Service by the OpCo QPs may be dynamic. In

anticipation of the above, Nucleus Connect has proposed an approach whereby the Service Schedule may be automatically “executed or terminated” depending on the respective situations. Under Nucleus Connect’s approach, an OpCo QP who had executed the Master Interconnection Offer (ICO) Agreement and who had passed the necessary tests in the IOT Service Schedule, could obtain any Services from Nucleus Connect. Once such an OpCo QP submits a valid request, the respective Service Schedule (including the terms and conditions therein) would be deemed to be automatically applicable to the OpCo QP. Conversely, when the OpCo QP ceases to have any services, the respective Service Schedule would be automatically terminated. IDA considers that this approach provides sufficient clarity and provides flexibility to cope with the dynamic and vibrant market environment of the NGNBN.

Charges by Nucleus Connect

30. IDA notes that there were some concerns expressed by the industry with respect to the imposition of certain Charges by Nucleus Connect under the ICO. As aforementioned, the scope of the consultation conducted by IDA on 18 August 2009 explicitly excluded discussion regarding prices of the Services offered under the ICO as they were part of Nucleus Connect’s bid submission in response to IDA’s RFP for the creation of the OpCo. Notwithstanding, IDA assures the industry that IDA will, where necessary, conduct regular price reviews to ensure that these Charges remain relevant and in line with IDA’s stipulated pricing methodology.
31. That said, IDA nevertheless is of the view that in certain instances, Charges should not be imposed on OpCo QPs or that certain Charges need to be aligned with the finalised NGNBN NetCo ICO for consistency. For example, IDA considers where the Charge is related to or in connection with the suspension (or termination) of a Service, and such suspension (or termination) arose because of Nucleus Connect’s fault, then it would be unreasonable and unfair if the OpCo QP has to bear the liability of this Charge.
32. In the case of suspension, IDA is of the view that it would be unreasonable and unfair if the OpCo QP has to bear the liability of the reconnection of service Charge or to continue to pay for the suspended service, in the event the suspension of the service was attributable to Nucleus Connect’s fault in the first place.
33. In the case of termination of services under the Schedules, IDA notes that termination Charges and costs may arise from the following: (a) removal of Patching Services; (b) removal of OpCo QP’s equipment; (c) reinstatement of the site; and (d) Monthly Recurring Charges for the remainder of the contract term (i.e., the early termination charges).

34. With regard to the removal of Patching Services and reinstatement of site, IDA considers it fair and reasonable that the OpCo QP not be made liable for such costs when the termination of the service was the result of Nucleus Connect's fault. However, OpCo QP would have to bear the costs of disconnecting, removing and/or disposing of its own equipment, since it is the OpCo QP's obligation to disconnect and remove its equipment upon termination. Where an OpCo QP is being recalcitrant in fulfilling this obligation to disconnect and remove its own equipment, IDA is of the view that the OpCo QP should bear Nucleus Connect's reasonable costs for such disconnection and removal.
35. With regard to early termination charges, IDA's position is that unless the termination was the result of the OpCo QP's fault, the OpCo QP should not be liable to Nucleus Connect for such charges. It is unfair to expect the OpCo QP to continue to pay Monthly Recurring Charges when the service(s) under the Schedules has been terminated, through no fault of its own.
36. To this end, IDA has directed Nucleus Connect, in its annotations to the ICO and Schedules, to modify the relevant clauses on suspension and termination, where applicable.
37. The industry had also commented that there was lack of clarity over certain Charges, particularly Third Party Charges, and what these Charges would cover and how these Charges would apply. IDA agrees with the industry that Nucleus Connect should provide greater clarity in relation to these Charges. As a general principle, IDA would require that any costs incurred by Nucleus Connect should be reasonably incurred and must be in relation to the provision of the services to the OpCo QP. To the extent possible, IDA would require Nucleus Connect to list the Charges, the deliverables in relation to these Charges and the situations in which these Charges would be incurred. For Charges that could not be determined or anticipated upfront, typically the Third Party Charges, IDA would require Nucleus Connect to seek OpCo QPs' approval before incurring such charges. While the above give OpCo QPs greater certainty, it would also mean that there might be multiple iterations between Nucleus Connect and the OpCo QPs. In this regard, the OpCo QPs should note that the standard Service Activation Period might be extended in the above cases.

Timelines and Processes in relation to Nucleus Connect ICO

38. The industry has requested for improvement in certain timelines (e.g., longer payment term) in the ICO. In this respect, IDA has required Nucleus Connect to improve the timelines, where relevant, to better its service offering to the OpCo QPs. However, IDA is mindful of the need to balance the above with the reality that the Network is new. As the NGNBN NetCo, Nucleus Connect, and the OpCo QPs acquire experience regarding NGNBN service provisioning, IDA assures the

industry that it will review these timeframes with a view to further improve the efficiency and effectiveness of all processes involved.

39. Arising from the industry structure of the NGNBN (i.e., the separation of the operation of the passive network and active network), there is a need to closely align the processes of the NGNBN NetCo and Nucleus Connect to ensure seamless service provisioning. In this respect, IDA has required Nucleus Connect to review a number of its processes in its ICO to take into consideration the finalised NGNBN NetCo ICO, which has been approved by IDA.

Clarity of Nucleus Connect's ICO and Mandated Service Information

40. A number of respondents have commented that Nucleus Connect's ICO lacks clarity in certain areas (e.g., technical interface standards and the type of technologies that would be supported as well as certain operational details like applicable safety regulations). IDA agrees that such details would be necessary in order for the OpCo QPs to take up the Services offered under the Nucleus Connect ICO. In this respect, IDA has required Nucleus Connect to provide such details in its ICO, as Mandated Service Information ("**MSI**") or as general technical information that would be available to all. At a minimum, IDA requires Nucleus Connect to provide the following:
 - (a) list of technical interface standards for its services;
 - (b) list of the type of technologies that would be supported for its services;
 - (c) operational details like applicable safety regulations; and
 - (d) technical specifications of its Hardened NTE.
41. In the interim period before Nucleus Connect's platform is implemented, IDA would also require Nucleus Connect to make available its MSI and other general technical information in an easily accessible manner, and be made available online to OpCo QPs.

Conclusion

42. 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 that the ICO continues to be relevant to the industry and the prevailing market conditions in Singapore.