



**EXPLANATORY MEMORANDUM ISSUED BY
THE INFO-COMMUNICATIONS DEVELOPMENT AUTHORITY OF SINGAPORE
("IDA")**

**DIRECTION OF THE IDA MADE PURSUANT TO SECTION 27 OF THE
TELECOMMUNICATIONS ACT (CHAPTER 323) IN RESPECT OF THE REVIEW
OF NUCLEUS CONNECT PTE LTD'S INTERCONNECTION OFFER FOR THE
PROVISION OF SERVICES OVER THE NEXT GENERATION NATIONWIDE
BROADBAND NETWORK**

31 December 2012

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EXPLANATORY MEMORANDUM

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1. This Explanatory Memorandum sets out the reasons for IDA's Direction dated 31 December 2012, issued by IDA to Nucleus Connect Pte Ltd ("**Nucleus Connect**"), directing it to incorporate IDA's Required Modifications to its Interconnection Offer (the "**ICO**").
2. For the avoidance of doubt, Nucleus Connect shall give effect to IDA's Required Modifications as specified in this Explanatory Memorandum, in addition to IDA's other Required Modifications as specified in other parts of the Direction.
3. Unless the context requires otherwise, all capitalised terms used in this Explanatory Memorandum shall have the same meanings as in the ICO.

PART I: INTRODUCTION

4. Under the Code of Practice for Next Generation National Broadband Network OpCo Interconnection ("**OpCo Code**"), among others, the ICO shall contain a comprehensive and complete written statement of the prices, terms and conditions upon which Nucleus Connect will offer to provide Mandated Services to Operating Company Qualifying Persons ("**OpCo QPs**"). Further, the ICO shall be modular as well as be sufficiently detailed to enable an OpCo QP that is willing to accept the ICO prices, terms and conditions, to obtain the Mandated Services from Nucleus Connect, by accepting the ICO.
5. Earlier this year, IDA conducted a holistic review of OpenNet Pte Ltd's ("**OpenNet**") Interconnection Offer (the "**OpenNet ICO**") to address certain operational issues which have arisen related to the implementation of Next Generation Nationwide Broadband Network ("**Next Gen NBN**") at the Network Company ("**NetCo**") layer. The amended OpenNet ICO was approved by IDA on 3 July 2012 and took effect from 10 July 2012. IDA considers that it is similarly necessary to conduct a review of Nucleus Connect's ICO to ensure that the effects of the modifications to the OpenNet ICO are passed through to Nucleus Connect's Contracting Qualifying Persons ("**Contracting QPs**") to the extent that they are applicable. Under Section 12 of the OpCo Code, IDA is empowered to review and require Nucleus Connect to modify the terms and conditions of its ICO at any appropriate time.
6. Accordingly, IDA has required Nucleus Connect to submit its proposed modifications to the ICO for IDA's review on 20 July 2012. As part of the ICO review process, IDA has required Nucleus Connect to propose certain changes to the ICO. In addition, Nucleus Connect has also proposed certain changes of its own to the ICO. Nucleus Connect has since submitted both

sets of its proposed changes to the ICO ("**Draft Revised ICO**") for IDA's consideration.

7. On 8 October 2012, IDA commenced a public consultation ("**Public Consultation**") to seek the views and comments from the industry on the Draft Revised ICO.
8. By the close of the Public Consultation on 7 November 2012, IDA had received comments from M1 Limited and Singapore Telecommunications Limited. IDA thanks the respondents for their comments.

PART II: SUMMARY OF KEY COMMENTS RECEIVED AND IDA'S DECISIONS

Section 1 – Deployment and Retrieval of NC Equipment

9. In its Draft Revised ICO, Nucleus Connect has proposed to clarify the process and responsibilities related to the retrieval of Nucleus Connect's equipment ("**NC Equipment**") from the End-User Premises should the ICO be terminated. Specifically, Nucleus Connect has proposed that the Contracting QP shall either: (a) retrieve and return to Nucleus Connect all NC Equipment installed at the End-User Premises (at the Contracting QP's own costs); or (b) arrange for Nucleus Connect to collect such NC Equipment from the End-User Premises.
10. Nucleus Connect has also proposed that if the NC Equipment is lost or damaged, or where Nucleus Connect is unable to collect the NC Equipment, Nucleus Connect shall be entitled to impose replacement costs on the Contracting QP for the NC Equipment.

Industry's Submission

11. IDA received the following comments from the respondents on Nucleus Connect's proposed changes:
 - (a) The applicable NC Equipment should be limited to only the Network Termination Equipment ("**NTE**") placed in the End-User Premises.
 - (b) The Contracting QP and End-Users may have limited or no rights to access the End-User Premises under certain circumstances. As such, Nucleus Connect should inform the Contracting QP of its intention to recover its NTE from the End-User Premise immediately upon receipt of the Contracting QP's order for termination.
 - (c) In cases where the Contracting QP coordinates appointments for Nucleus Connect's collection of its NTE at the End-User Premise, Nucleus Connect ought to collect its NTE within the appointed time period. If Nucleus Connect fails to recover its NTE within such period, neither the End-User nor the Contracting QP should be made liable for any damage or loss of the NTE.

- (d) An NTE may be used to provide Mandated Services to more than one (1) Contracting QP. A Contracting QP using the said NTE who terminates its Mandated Service should not be automatically required to retrieve and return the NTE to Nucleus Connect without being informed by Nucleus Connect. Furthermore, in the event that such an NTE is damaged or lost, the replacement cost for the NTE should be apportioned among the Contracting QPs served by that NTE. The industry also commented that such cost should exclude all damages due to fair wear and tear.
- (e) The ICO should stipulate a timeline to ensure timely collection of the NTE from the End-User Premises and prompt notification by Nucleus Connect to Contracting QPs of any damage/loss.
- (f) If Nucleus Connect requires the Contracting QP to retrieve its NTE, there should be no Collection Charge payable to Nucleus Connect. Instead, Nucleus Connect should pay the applicable commercial fees to engage respective Contracting QPs to retrieve its NTE.

IDA's Assessment

- 12. IDA understands that in most cases, Nucleus Connect will deploy NTEs only at End-User Premises for service provisioning. However, IDA also understands that due to the nature of the services provided, there is a possibility that Nucleus Connect may be required to install equipment (e.g., router, patch panels and rectifiers) other than NTEs ("**Non NTE Equipment**") at Contracting QP's premises and/or End-User Premises. In order to accord Nucleus Connect with sufficient flexibility, IDA is of the view there is no need to limit the type of NC Equipment to be deployed. However, where Nucleus Connect intends to deploy Non NTE Equipment at the Contracting QP's premises and/or End-User Premises, such equipment must be deployed only at the request of the Contracting QP and/or for the purpose of providing the requested services to the Contracting QP. In addition, Nucleus Connect must seek the agreement of the Contracting QP prior to the deployment of the Non NTE Equipment and provide reasons to the Contracting QP why such deployment is necessary.
- 13. IDA notes that there is confusion over the process and responsibilities related to the retrieval of NC Equipment. In so far as the day-to-day deactivation of service (where the ICO remains valid) is concerned, IDA notes that the present process is as follows:
 - (a) Nucleus Connect will inform the Contracting QP on whether the NC Equipment will need to be collected upon receiving a deactivation of service request from the Contracting QP; and
 - (b) Nucleus Connect will remain responsible to retrieve the NC Equipment which it would do so either by deploying its own staff or to engage the service of third parties to retrieve the equipment. It is further noted that in some cases, these third parties could be the Contracting QPs

themselves. For such retrieval of NC Equipment, Nucleus Connect will rely on the Contracting QPs to arrange the appropriate time for collection of the NC Equipment.

IDA notes that Nucleus Connect is not proposing to make any changes to the above process.

14. With respect to the retrieval of NC Equipment upon the termination of the ICO, IDA notes that Nucleus Connect is proposing to give Contracting QP the option of either: (a) retrieving and returning to Nucleus Connect all NC Equipment installed at the End-User Premises (at the Contracting QP's cost); or (b) arranging for Nucleus Connect to collect such NC Equipment from the End-User Premises. As the approach to retrieve the NC Equipment is ultimately determined by the Contracting QP, IDA is of the view that the options proposed by Nucleus Connect are not unreasonable.
15. Nevertheless, IDA agrees that the industry has raised various valid concerns on the process and responsibilities related to the retrieval of NC Equipment upon the termination of the ICO. IDA's view on these are as follows:
 - (a) As one NC Equipment may be used to provide Mandated Services to more than one (1) Contracting QP, Nucleus Connect should immediately inform the Contracting QP on whether the NC Equipment has to be retrieved from the End-User Premise where the ICO is terminated.
 - (b) Where Nucleus Connect is the party collecting the NC Equipment after the Contracting QP has made the necessary appointment (which should be mutually agreed between Nucleus Connect and its Contracting QP taking into consideration the availability of the End-User) with the End-User, IDA agrees with the respondent's comment that Nucleus Connect should closely follow the appointment time for the collection of the NC Equipment. Where Nucleus Connect fails to retrieve its NC Equipment during the appointed time, it is unreasonable to make the Contracting QP liable for any damage or loss of the NC Equipment.
 - (c) For cases where the Contracting QP chooses to retrieve the NC Equipment, IDA agrees that such retrieval should be at the Contracting QP's cost. For a Contracting QP who does not wish to bear this cost, it can always choose the option of arranging for Nucleus Connect to collect the NC Equipment. For the avoidance of doubt, the Contracting QP should not be liable for any collection charge from Nucleus Connect, where the Contracting QP chooses the option of retrieving and returning to Nucleus Connect all NC Equipment installed at the End-User Premises.
 - (d) To ensure timely collection of NTEs from the End-User Premises, IDA agrees with one of the industry respondent that Nucleus Connect should prescribe reasonable timeframes for the collection of NTEs from

End-User Premises in the ICO. In circumstances where either Nucleus Connect or the Contracting QP is unable to adhere to the timeframes under the ICO due to reasons beyond the control of both parties (e.g., at the request of the End-User), IDA expects the parties to cooperate in good faith and to work out alternative timeframes.

16. In the event that the NC Equipment is damaged or lost, IDA agrees that any replacement cost should exclude damages due to fair wear and tear. In addition, where an NC Equipment is used to provide Mandated Services to multiple Contracting QPs, while there is merit for Nucleus Connect to apportion the cost amongst the relevant Contracting QPs for damage or loss of NC Equipment where such damage or loss is not attributable to a single Contracting QP, such apportionment may result in the End-User liaising with and making payment to multiple Contracting QPs for the same piece of NC Equipment. IDA is of the view that such an apportionment arrangement may create confusion to End-Users, especially if different Contracting QPs adopt different practices in recovering costs from End-Users for the same piece of NC Equipment. As such, IDA will not require Nucleus Connect to apportion the cost of damage or loss of NC Equipment to multiple Contracting QPs. Where Nucleus Connect decides to impose such replacement cost for NC Equipment on a Contracting QP for any damaged or lost equipment, Nucleus Connect shall promptly notify the Contracting QP of its intention. This is to enable the relevant Contracting QP to have sufficient lead-time to seek reimbursement from the End-User where applicable.

Section 2 – Access to Nucleus Connect’s Co-location Space

17. Pursuant to IDA's direction to Nucleus Connect dated 8 December 2009 (“**2009 Direction**”)¹, Nucleus Connect is required to, when requested by any Contracting QP, to negotiate a commercial agreement in good faith to allow the Contracting QP to access and deploy telecommunication cables into Nucleus Connect’s Central Offices (“**COs**”) for the purpose of obtaining Nucleus Connect’s services.

Industry’s Submission

18. A respondent has suggested that Nucleus Connect should enable a Contracting QP to deploy its own fibre to access Nucleus Connect’s Mandated Services at Nucleus Connect’s CO as an Ancillary Mandated Service at cost-based charges.

IDA’s Assessment

19. As highlighted in the Explanatory Memorandum to the 2009 Direction², IDA agrees with the industry that Nucleus Connect should allow OpCo QPs (or Contracting QPs) to have choices, including the option of deploying their own fibre or to lease third party fibre (e.g., fibre segment services from the NetCo),

¹ Please refer to Annex A.

² Please refer to Annex B.

to access Nucleus Connect's services at Nucleus Connect's COs. Notwithstanding the above, as these Contracting QPs already have the option of leasing bandwidth services from Nucleus Connect, under the ICO, to bring the traffic back to their respective data centres, IDA decided that Nucleus Connect should only be required to provide such access to its COs via a commercial agreement.

20. IDA notes that since the 2009 Direction, the industry has not highlighted that it has encountered any implementation issues/problems to access Nucleus Connect's COs via a commercial agreement. Moreover, Nucleus Connect is operating in a market environment with several Operating Companies on the Next Gen NBN. In addition, the key prices, terms and conditions of such commercial agreements proposed by Nucleus Connect will be subject to IDA's review and approval. In view of the above, it does not appear necessary to subject the above Nucleus Connect's offering to further regulatory oversight at this stage. Accordingly, IDA's position is that it is more appropriate to maintain the current arrangement (as captured in the 2009 Direction) which requires Nucleus Connect to negotiate, in good faith, a commercial agreement with any Contracting 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. IDA will continue to monitor the situation and will take further regulatory measure where it is necessary.

Section 3 – Nucleus Connect's Offerings to Effect Modifications to the OpenNet ICO

21. As part of the ICO review, IDA has required Nucleus Connect to propose changes to the ICO so that the effects of the modifications to the OpenNet ICO are consequently passed through to Nucleus Connect's Contracting QPs.

Industry's Submission

22. One respondent noted that Nucleus Connect has restricted its offer for relocation to Residential Per-End-User Connection and Non-Residential Per-End-User Connections only. The respondent submitted that Nucleus Connect must offer relocation services for all End-User Connections (including NBAP Per-End-User Connections, L2 VPN Services, L3 VPN Services and E-LAN Services).

IDA's Assessment

23. IDA understands that Nucleus Connect has not availed the relocation service to its other more complex managed type of End-User Connections as the relocation of such services may not be straightforward and may be highly customised for different Contracting QPs. Hence, there may not be a standard solution that can be prescribed under the ICO to cater to all circumstances. In this regard, IDA will not require Nucleus Connect to extend its relocation service to all its other End-User Connections in the ICO at this point in time. For Contracting QPs who wish to request for such relocation service, they

should however approach Nucleus Connect to negotiate a Customised Agreement. For the avoidance of doubt, nothing in the foregoing shall prejudice IDA's right to subsequently require Nucleus Connect to include the relevant service offering under the ICO where appropriate.

24. In addition to the above, IDA also notes that Nucleus Connect has also not proposed changes to the ICO to allow the effects of the following modifications to the OpenNet ICO to pass through to Nucleus Connect's Contracting QPs:

- (a) Relocation of a Termination Point ("**TP**") within a premise;
- (b) Repair and replacement of a TP; and
- (c) Allow a Contracting QP to check whether a location is a Non-Residential Premise or Non-Building Access Point ("**NBAP**").

Considering that there may be Contracting QPs who may wish to be a one-stop Next Gen NBN service provider (including providing TP related services) but are unable to place orders through the OpenNet ICO directly, IDA is of the view that it is necessary for Contracting QPs to be able to order such relocation, and repair and replacement of TP services from Nucleus Connect. Likewise, Nucleus Connect needs to allow Contracting QPs to check if a location is a Non-Residential Premise or an NBAP prior to placing an order. Accordingly, Nucleus Connect is required to make the appropriate changes to the ICO to offer the services under paragraph 24.

PART III: CONCLUSION

25. In conclusion, IDA assures the industry that as the Next Gen NBN matures, IDA will continue to review the relevance of the ICO to ensure that it continues to be relevant and appropriate to the prevailing market conditions in Singapore.