

Dated [] Aug 2012



**CO-LOCATION AGREEMENT
(TUAS CENTRAL OFFICE)**

BETWEEN

OPENNET PTE. LTD.

AND

NUCLEUS CONNECT PTE. LTD.

THIS CO-LOCATION AGREEMENT is made on [] Aug 2012

BETWEEN:

- (1) **OPENNET PTE. LTD.** (Company Registration Number: **200819712H**), a company incorporated in Singapore with its registered address at 152 Beach Road #31-05/08, Gateway East, Singapore 189721 ("**ON**")

AND

- (2) **NUCLEUS CONNECT PTE. LTD.** (Company Registration Number: **200906560W**), a company incorporated in Singapore with its registered address at 3 Tai Seng Drive #04-01, Singapore 535216; ("**NC**" or "**Requesting Licensee**")

(collectively, the "**Parties**", and each, a "**Party**")

WHEREAS:

- (A) Under the terms of ON's FBO License, ON must offer certain mandated services (including co-location services) to certain Requesting Licensees pursuant to the Approved ICO (as defined below).
- (B) Schedule 12 of the Approved ICO requires that all Requesting Licensees shall ensure that their co-location equipment at the co-location space (provided under Schedule 12) does not exceed a specified heat load limit ("**ICO Heat Load Limit**").
- (C) NC has agreed to take up ten (10) square metres of Co-Location Space initially. However, NC has projected that it would exceed the ICO Heat Load Limit within the duration of this Co-location Agreement, as its Co-Location Equipment would generate up to 14.8 kilowatts of heat (which includes two router racks generating 3.0 kilowatts per rack and an OLT rack generating 1.8 kilowatts).
- (D) Initially, ON and NC had entered into a Co-Location Agreement dated 15 April 2010 in relation to NC's access into the Co-Location Space for the purpose of installing and testing its Co-Location Equipment and carrying live traffic via the Co-Location Equipment (the "**Previous Co-Location Agreement**"), in respect of all ON's Central Offices (including Tuas Central Office). The Previous Co-Location Agreement was initially scheduled to expire on 27 April 2011. The Parties subsequently extended the Previous Co-Location Agreement.
- (E) ON has now offered supplementary cooling solution for all its Central Offices pursuant to Schedule 12B of the Approved ICO. While ON has installed the supplementary cooling system in all its Central Offices and will install the supplementary cooling system in Tuas CO when there is sufficient demand, Parties agree that this Agreement shall regulate Parties respective obligations and responsibilities until such time as the situation in Tuas CO warrants the installation and activation of the supplementary cooling system.
- (F) ON will now grant NC access to the Co-Location Space in Tuas CO for the purpose of installing and testing its Co-Location Equipment and carrying live traffic via the Co-Location Equipment, upon and subject to the terms and conditions of this Agreement.

IN CONSIDERATION OF THE PARTIES' MUTUAL AGREEMENTS, UNDERTAKINGS AND COVENANTS HEREIN, IT IS HEREBY AGREED AS FOLLOWS:

1. DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this Agreement, unless the context otherwise requires, capitalised terms shall have the following meanings:-

“**Approved ICO**” has the meaning ascribed to it in Clause 1.2.1 below;

“**Code**” means the NetCo Interconnection Code 2009 or successor code of practice and as may be amended from time to time;

“**End Date**” means 31 March 2013;

“**Interim Cooling Solution**” has the meaning ascribed to it in Clause 5.1.3 below;

“**Law**” means any domestic or foreign constitutional provision, statute or other law (including common law), act, rule, regulation, subsidiary legislation, ordinance, treaty, code, permit, certificate, license, or interpretation of any Governmental Agency and any decision, decree, resolution, injunction, judgment, order, ruling, interpretation, or assessment issued by any Governmental Agency, including any of the foregoing applicable to health, safety and environmental matters;

“**Licensed Space**” means summation of the rack space based on rack type 600mm by 600mm or 800mm by 1000mm;

“**Start Date**” has the meaning ascribed to it in Clause 2.1 below; and

“**Tuas CO**” means ON’s Tuas Central Office as listed in the Approved ICO.

1.2 Interpretation

In this Agreement:-

1.2.1 unless otherwise defined in this Agreement, all terms and references defined in the OpenNet Approved ICO (“**Approved ICO**”) (as set out on the IDA webpage <http://www.ida.gov.sg/Policies%20and%20Regulation/20090224174101.aspx#13Nov09> or any successor webpage and as may be amended from time to time), shall have the same meaning and construction when used in this Agreement;

1.2.2 the definition of terms herein shall apply equally to the singular and plural forms of the terms defined, and any pronoun shall include the corresponding masculine, feminine and neuter forms;

1.2.3 unless the context otherwise requires, any definition or reference to any instrument, statute or statutory provision shall be construed as referring to such instrument, statute or statutory provision as from time to time amended, supplemented, extended, consolidated or replaced and subject to any restrictions on such amendments, supplements, extensions, consolidations or replacements and any orders, regulations, instruments or other subordinate legislation made thereunder;

1.2.4 the words "include", "includes" and "including" shall be deemed to be followed by the phrase "without limitation";

1.2.5 unless otherwise provided herein or the context otherwise requires, all references to clauses, schedules, recitals and annexures are to the clauses schedules, recitals of and annexures to this Agreement;

- 1.2.6 the words "herein", "hereof" and hereunder" and words of similar import shall be construed to refer to this Agreement in its entirety and not to any particular provision hereof;
- 1.2.7 an expression importing a natural person shall include an individual, corporation, company, partnership, firm, trustee, trust, executor, administrator or other legal personal representative, unincorporated association, joint venture, syndicate or other business enterprise (notwithstanding that "person" may be sometimes used herein in conjunction with some of such words), and their respective successors, legal personal representatives and assigns, as the case may be, and pronouns shall have a similarly extended meaning. References to a company shall be construed so as to include any company, corporation or other body corporate wherever and however incorporated or established;
- 1.2.8 dates and times are to Singapore time;
- 1.2.9 the Schedules form part of this Agreement and have the same force and effect as if expressly set out in the body of this Agreement;
- 1.2.10 the headings in this Agreement are for reference only and shall not affect the interpretation of this Agreement; and
- 1.2.11 any thing or obligation to be done under this Agreement which is required or falls to be done on a stipulated day, shall be done on the next succeeding Business Day, if the day upon which that thing or obligation is required or falls to be done falls on a day which is not a Business Day.

2. GRANTING OF ACCESS TO CO-LOCATION SPACE

- 2.1 ON shall grant NC access to the Co-Location Space in Tuas CO from 1 August 2012 (the "Start Date") to the End Date or the date of termination of this Agreement as provided herein, for the sole purpose of installing and testing its Co-Location Equipment and carrying live traffic via the Co-location Equipment. With effect from the Start Date, the Previous Co-Location Agreement shall be terminated and superseded by this Agreement in its entirety. Notwithstanding anything in this Agreement to the contrary, the Parties hereby agree and acknowledge that this Agreement shall be submitted to the Authority and will not become effective until approved by the Authority (or deemed approved by the Authority as provided for in the Code).
- 2.1A For avoidance of doubt, the terms and conditions of this Agreement shall only apply to Co-Location Space and Co-Location Equipment in Tuas CO.
- 2.2 (a) Each Party acknowledges that the Co-Location Space in Tuas CO is subject to the ICO Heat Load Limit. However, NC wishes to proceed with the installation and testing of its Co-Location Equipment and to carry live traffic via the Co-location Equipment, even though the heat generated by its Co-Location Equipment will exceed the ICO Heat Load Limit and a suitable supplementary cooling system has not been installed.
- (b) NC acknowledges and agrees that its Co-Location Equipment in Tuas CO should not generate heat greater than 900 watts per square metre of Licensed Space, and that each rack installed by NC should not exceed a heat load limit of 1.5 kilowatts per rack. ON will not be liable for any loss suffered by NC or any third party as a result of NC's installation and testing of its Co-Location Equipment and its carriage of live traffic via the Co-Location Equipment as aforesaid, except where such loss is caused by ON's gross negligence, wilful default or breach of this Agreement.
- 2.3 NC acknowledges and agrees that it shall take up a minimum of ten (10) square metres of Co-Location Space in Tuas CO and shall pay all relevant charges listed in Clause 12 of Schedule 15 of the Approved ICO.

- 2.4 (a) NC further acknowledges and agrees that if the heat generated by its Co-Location Equipment in Tuas CO exceeds the heat load limits stated in Clause 2.2(b) above, NC shall pay an additional monthly recurring charge (“**AMRC**”) based on the following calculation:

$$\text{AMRC} = ((\text{Total heat of NC's Co-location Equipment} / 900 \text{ watts}) - 10) \times \text{S\$}500$$

Calculation of the AMRC is based on the heat load of the installed Co-Location Equipment in Tuas CO, which may increase whenever new Co-Location Equipment is installed. Upon the installation and operation of the supplementary cooling system, the AMRC shall cease to apply.

- (b) Notwithstanding Clause 2.4(a) but subject to Clause 2.4(c), ON reserves the right to refuse to allow NC to install any additional Co-Location Equipment in Tuas CO which will result in the total heat load of NC's Co-Location Equipment exceeding 17.8 kilowatts in Tuas CO.
- (c) For the avoidance of doubt, when the total heat load of NC's Co-location Equipment in Tuas CO exceeds 17.8 kilowatts, NC may (subject to space availability in Tuas CO) acquire additional Co-location Space in Tuas CO in order to meet such additional heat load. NC shall pay for the additional heat load based on the AMRC formula referred to in Clause 2.4(a) above. If such additional Co-location Space is not available in Tuas CO, the Parties will enter into good faith discussions to discuss the possibility of implementing measures to allow NC to install additional Co-Location Equipment which will result in the total heat load of such Co-Location Equipment exceeding 17.8 kilowatts in Tuas CO.

3. Measurement of Temperature

3.1 Methodology

- (a) Measurements shall be done at a distance of 1.5 m above the floor level every 3 to 6 m along the centre line of the cold aisles and at any location at the air intake of operating equipment. Temperature measurements should be taken at several locations of the air intake of any equipment with potential cooling problems.
- (b) NC shall provide the air temperature measurement instrument (ie. sling thermometer) used for the measurement.

3.2 Frequency

- (a) NC shall perform the periodic temperature measurement, and report to ON with the results of its measurements. The first measurement shall be taken after the initial installation of Co-Location Equipment in Tuas CO. Thereafter, measurements shall be made at least once per month, throughout the duration of this Agreement.
- (b) Any installation of new Co-Location Equipment (including cards) or modification of the existing Co-Location Equipment in Tuas CO, which may change or increase the heat load, will also trigger a measurement by NC.
- (c) ON may join NC on site in performing the measurement. Once the temperature exceeds the agreed value stated in Clause 5.1.5(b) below, NC shall take the appropriate corrective action and inform ON immediately.

4. Measurement of Heat Load (to verify heat load < agreed threshold)

- 4.1 The measurement of the total heat load will be assessed by taking 90% of the product of the measured total input current and the total input voltage (i.e. 90% x total input current x total input voltage).
- 4.2 NC shall perform the measurement of the total input current supply to NC's Co-Location Equipment in Tuas CO, with a clamp meter, in the following instances:
- (a) after NC's initial Co-Location Equipment in Tuas CO has been installed, tested and operationally stabilized; and
 - (b) whenever NC adds more Co-Location Equipment in the Co-Location Space in Tuas CO.

5. UNDERTAKINGS BY NC

- 5.1 NC irrevocably covenants and undertakes to ON that it shall:-
- 5.1.1 only have access to the Co-Location Space in Tuas CO from the Start Date to the End Date, during which period NC shall only be allowed to install and test its Co-Location Equipment and to carry live traffic via the Co-Location Equipment. The terms and conditions in Schedule 12 of the Approved ICO and the relevant charges listed in Clause 12 of Schedule 15 of the Approved ICO shall apply to NC's usage of the Co-Location Space in Tuas CO;
 - 5.1.2 comply with clause 1.1.3 of Annex 12D of Schedule 12 of the Approved ICO;
 - 5.1.3 before it begins testing its Co-Location Equipment in Tuas CO, install 1+1 industrial grade 24" fans for interim cooling to high heat load racks (i.e. >1.5kW heat load per rack) ("**Interim Cooling Solution**"). The fans are to run on 12-hrs rotation via timer relay during which period NC shall be allowed to install and test its Co-Location Equipment in Tuas CO and to carry live traffic via the Co-Location Equipment. The placement of fans is subject to reasonable aisle and specific site constraints notified to NC as soon as possible but at least two (2) weeks before the date of the planned installation, and standby off-site back-up blower fans will be made ready as redundancy;
 - 5.1.4 monitor its Co-Location Equipment temperature in Tuas CO and mitigate risks of hosting its Co-Location Equipment above the heat load limit of 900 watts per square metre of Licensed Space (including but not limited to auto-shutdown or auto re-set in the event of overheating and remote standby personnel) during the period when the Interim Cooling Solution is in operation. For the purposes of this Agreement, "**auto re-set**" means the automatic shutdown of the affected Co-Location Equipment in the event of overheating, followed by the subsequent automatic reactivation of the Co-Location Equipment when the overheating has abated or ceased;
 - 5.1.5 adopt the specific American Society of Heating, Refrigerating and Air-Conditioning Engineers "ASHRAE" recommendations contained in the document entitled "Thermal Guidelines for Data Processing Environments" and "Environmental Guidelines for Datacom Equipment" for high temperature safety checking and capping, based on ON maintaining a general room temperature of 24 deg C average over the Co-Location Space in Tuas CO, including, but not limited to:
 - (a) keeping Envelope Air Temperature lower than 25 deg C whenever possible;
 - (b) ensuring that the Revised (2008) (Tolerated) Envelope Air Temperature does not exceed 27 deg C; and
 - (c) when air temperature at cold aisle intake of Co-Location Equipment reaches 28 deg C and above, or the HI-TEMP alarm is triggered by call, for appropriate remedial and response action shall be taken to bring down

temperature back to within cap of 27 deg C. This should be done during rack load startup, and temperature checks taken after the load has stabilised. Any further change or increased in heat load substantially will call for a re-temperature check accordingly to within cap of 27 deg C;

- 5.1.6 in the event of the heat load and/or temperature at the cold aisle (relating to NC's Co-Location Equipment) in Tuas CO exceeds 900 watts per square metre of Licensed Space and/or the temperature limit stated in Clause 5.1.5(b) above respectively, subject to ON granting access to the Co-Location Space if requested, take immediate measures to resolve the problem (which may involve adding more fan(s) for cooling the cold aisle or any other practical options depending on site conditions). Where NC's Co-Location Equipment in Tuas CO is causing overheating and the problem cannot be resolved, NC shall (subject to ON granting access to the Co-Location Space if requested) remove the source of heat load immediately. If NC fails to take such immediate measures to resolve the problem, ON may take any action that ON, in its sole discretion, considers necessary to alleviate or resolve the problem, which shall be at NC's reasonable cost. ON shall as far as reasonably practicable give NC prior written notice of such action before carrying out the same;
 - 5.1.7 if it activates or causes the activation of the gas suppression system (FM200 or similar) within the Co-Location Space in Tuas CO or the building in which the Co-Location Space in Tuas CO is located, bear all costs and expenses of restoring the gas suppression system (FM200 or similar) and any damage caused by the activation of the gas suppression system (FM200 or similar). Without limitation but subject to the limitation of liability provisions in the Approved ICO, NC will be responsible for any damage to any part of, or anything within, the Co-Location Space in Tuas CO or the building in which the Co-Location Space in Tuas CO is located that is caused or contributed to by NC; except where such damage is caused by ON's gross negligence, wilful default or breach of this Agreement. If NC fails to take immediate action to make good such damage, ON may, in its sole discretion, take action to make good such damage at NC's reasonable cost and expense and suspend NC's physical access to the Co-location Space in Tuas CO upon giving written notice thereof to NC. ON shall as far as reasonably practicable give NC prior written notice of such action before carrying out the same. Provided That NC's liability under this Clause 5.1.7 shall be subject to the gas suppression system (FM200 or similar) functioning adequately and properly at all material times; and
 - 5.1.8 allow ON, in the event that ON reasonably considers that any Co-Location Equipment installed within the Co-Location Space in Tuas CO or the installation, operation or maintenance of such Co-Location Equipment to pose an actual or imminent risk of personal injury to any person or damage to any property (including ON's or a third party's equipment, plant, facilities or networks) to immediately take any action that ON, in its reasonable discretion, considers necessary to alleviate such actual or potential risk, which shall be at NC's reasonable cost.
- 5.2 Each and every undertaking under Clause 5.1 is a separate and independent primary obligation and shall be severally enforceable.

6. OPENNET'S OBLIGATIONS

- 6.1 Save as expressly amended and supplemented by this Agreement, ON shall provide NC with the Co-Location Space upon and subject to the terms and conditions of Schedule 12 of the Approved ICO.
- 6.2 For the avoidance of doubt, the Parties acknowledge and agree that subject to NC continuing to pay all relevant charges listed in Clause 12 of Schedule 15 of the Approved ICO, NC shall not be obliged to remove its Co-Location Equipment from the Co-Location Space notwithstanding it has ceased testing the Co-Location Equipment or ceased carrying live

traffic via the Co-Location Equipment. The obligation of ON under this Clause 6.2 shall terminate upon the End Date, and shall not survive the expiry of this Agreement.

7. TERMINATION

7.1 Subject to Clause 7.2 below, this Agreement shall expire on the End Date. The Parties shall review the terms and conditions of this Agreement three (3) months prior to the date of expiry of this Agreement; save that this Agreement may only be amended in accordance with Clause 8.3 below.

7.2 The Parties agree that upon the installation and operation of the supplementary cooling system for Tuas CO pursuant to Schedule 12B of the Approved ICO, this Agreement shall be terminated and superseded by Schedule 12B of the Approved ICO in its entirety, with effect from the date the supplementary cooling system for Tuas CO becomes operational.

8. MISCELLANEOUS

8.1 Save as expressly amended and supplemented by this Agreement with regard to the Co-Location Service and the Co-Location Space in Tuas CO, the terms of the Approved ICO shall be incorporated herein and shall form part of this Agreement. For the avoidance of doubt, this Agreement shall be deemed to be a "Customised Agreement" pursuant to Clause 1.4 of Part 2 of the Main Body of the Approved ICO. In the event of any inconsistencies between the provisions of this Agreement and the Approved ICO with regard to the Co-Location Service and the Co-Location Space in Tuas CO, the terms of this Agreement shall prevail to the extent of such inconsistency.

8.2 Release, Waiver or Compromise

Any liability to either Party hereunder may in whole or in part be released, compounded or compromised, or time or indulgence may be given, by such Party in its absolute discretion without in any way prejudicing or affecting its rights against the other Party. Any release or waiver or compromise shall be in writing and shall not be deemed to be a release, waiver or compromise of similar conditions in the future.

8.3 Amendment

This Agreement may be amended only by an instrument in writing signed by all of the Parties. The Parties hereby acknowledge and agree that they shall, if required by the Authority, amend this Agreement to incorporate any additional or modified Duties Related to the Provision of Mandated Services (as defined in the Code) as required by the Authority during the term of this Agreement.

8.4 Invalidity

Any provision of this Agreement that is invalid or unenforceable in any Law in any jurisdiction will as to that jurisdiction only read down or severed to the extent of that invalidity or unenforceability. The remaining provisions of this Agreement which are self-sustaining and capable of separate enforcement without regard to the read down or severed provision in that jurisdiction or that provision in any other jurisdiction are and continue to be valid and enforceable in accordance with their terms.

8.5 Counterparts

This Agreement may be executed in any number of counterparts and all such counterparts taken together will be deemed to constitute one and the same instrument.

8.6 Governing Law and Submission to Jurisdiction

- 8.6.1 This Agreement shall be governed by and construed in all respects in accordance with the laws of Singapore and the Parties hereby irrevocably submit to the exclusive jurisdiction of the courts of Singapore. Nothing in this Clause shall limit the right of any Party hereto to bring any proceedings with respect to this Agreement against another Party in any court elsewhere nor shall the bringing of any proceedings in any jurisdiction preclude any Party from bringing any such proceedings in any other jurisdiction, whether concurrently or not.
- 8.6.2 The Parties acknowledge the competence of any such courts and agrees that a final judgment in any such proceedings brought in such courts shall be conclusive and binding upon it and if brought in the courts of Singapore, may be enforced in any other courts.

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IN WITNESS WHEREOF this Agreement has been entered into on the date stated at the beginning.

OpenNet Pte Ltd

Signed by _____
(Name of Signatory)

for and on behalf of
OPENNET PTE. LTD.
in the presence of:

)
)
)
)
)
(signature) _____
Title:

(signature of witness)
Name of Witness:
Title:

Nucleus Connect Pte Ltd

Signed by _____
(Name of Signatory)

for and on behalf of
NUCLEUS CONNECT PTE. LTD.
in the presence of:

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(signature) _____
Title:

(signature of witness)
Name of Witness:
Title: