

SCHEDULE 8E

**CO-LOCATION FOR WHOLESALE LOCAL LEASED CIRCUIT
(TAIL CIRCUIT) (TLLC)**

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SCHEDULE 8E

CO-LOCATION FOR WHOLESALE LOCAL LEASED CIRCUITS (TAIL CIRCUITS)

1. GENERAL

- 1.1** This Schedule sets out the terms and conditions under which SingTel will provide the Requesting Licensee with Co-Location Space and physical access thereto at Co-Location Sites to enable the Requesting Licensee to access Wholesale Local Leased Circuit (Tail Circuits) Service (**TLCC** Service) provided by SingTel in accordance with Schedule 7B.
- 1.2** Except as provided in this Schedule, the Requesting Licensee shall provide all installation materials and manpower needed for the installation of their Co-Location Equipment.
- 1.3** The list of Co-Location Sites as at the date of this RIO Agreement for TLLC is listed in Annex 8E.1. SingTel may vary the Co-Location Sites listed in Annex 8E.1 from time to time with the approval of the Authority.
- 1.4** SingTel shall not be responsible for any damage to the Requesting Licensee's Co-Location Equipment caused by fire, water leakage, air-conditioning/mechanical ventilation failure, power fluctuation/interruption, or anything beyond SingTel's control in the Co-Location Site other than to the extent that it is the result of a grossly negligent, wilful or reckless breach of this RIO Agreement by SingTel.
- 1.5** This Schedule 8E only applies to Requesting Licensees who are FBOs.
- 1.6** (a) The timeframes in this Schedule relating to pre-provisioning work to be undertaken by SingTel under clauses 3.3, 4.3 and 4.4 (such as the completion of project studies and the assessment of applications) are subject to delays caused by events outside SingTel's reasonable control, in which case SingTel may extend these timeframes for a period equal to the period of such delays.
- (b) For the avoidance of doubt, a failure to meet these timeframes caused by events outside SingTel's reasonable control does not constitute a breach of this Schedule or this RIO Agreement.

- 1.7 (a) If SingTel fails to meet any timeframes in this Schedule relating to provisioning work to be undertaken by SingTel under clause 5.2, and the failure to meet the timeframe is solely caused by SingTel, SingTel will provide a remedy to the Requesting Licensee.
- (b) Such remedy will be in the form of a credit to the Requesting Licensee of the recurring Charges payable for the delayed services over a period equal to the period of the delay.
- (c) The Requesting Licensee acknowledges that this remedy is a genuine pre-estimate of the Requesting Licensee's loss and will be the sole and exclusive remedy available to the Requesting Licensee for such failure to meet provisioning timeframes and shall be SingTel's sole and exclusive liability to the Requesting Licensee for such failure.

1.8 The Parties acknowledge that the Authority may terminate SingTel's obligation to provide TLLC Services (and hence the obligation to provide Co-Location under this Schedule 8E) at any time and in particular on or before the expiry of the TLLC Central Term and/or TLLC Non-Central Term (as defined in Schedule 7B). Notwithstanding any provision in this Schedule 8E, in the event that the Authority modifies or removes the requirement on SingTel to provide the TLLC Service to the Requesting Licensee prior to the expiry of the TLLC Central Term and/or TLLC Non-Central Term, SingTel shall have the right, as the case may be, to:

- (a) modify the terms and conditions contained in this Schedule 8E for the supply of Co-Location for TLLC Service; or
- (b) terminate the licence of each Co-Location Space under this Schedule,
- in compliance with the Authority's direction.

2. AVAILABILITY AT A CO-LOCATION SITE

2.1 For the purposes of this Schedule, SingTel may have regard to the following when assessing the availability of Co-Location Space at a Co-Location Site:

- (a) SingTel's reasonably anticipated requirements in the next two (2) years for space at the Co-Location Site for the provision to itself and its Customers;

- (b) SingTel's reasonably anticipated requirements in the next two (2) years for space at the Co-Location Site for operation and maintenance purposes;
- (c) the Requesting Licensee and other Third Party requirements (including for operation and maintenance purposes) which have been ordered but not yet delivered or which have been provided;
- (d) security and confidentiality requirements imposed on SingTel by Governmental Agencies;
- (e) whether SingTel has plans or otherwise proposes to decommission the Co-Location Site.

3. ORDERING AND PROVISIONING PROCEDURE

3.1 The Requesting Licensee shall submit its request for Co-Location Space at a Co-Location Site for TLLC listed in Annex 8E.1 using a Co-Location Request Form in the form of Annex 8E.2 containing the following information:

- (a) the Co-Location Site listed in Annex 8E.1 at which Co-Location Space is sought;
- (b) confirmation that Co-Location Space at that Co-Location Site is for the purpose of connection to tail-end local leased circuits licensed or to be licensed under Schedule 7B;
- (c) the type of Co-Location Equipment proposed to be installed at that Co-Location Site;
- (d) the space (subject to clause 3.2) and power requirements;
- (e) the floor loading of the Co-Location Equipment;
- (f) the type of optical fibre cable to be used, and the diameter of the fibre cable connecting back to the Requesting Licensee's premises;
- (g) the quantity of the n x 64 Kbps Tie Cables (in multiples of eight (8) TLLC Services for below 2 Mbps TLLC Service bandwidth) and its specifications;
- (h) the quantity of 2 Mbps Tie Cables (in multiples of eight (8) TLLC Services for 2 Mbps TLLC Service bandwidth) and its specifications;

- (i) the quantity of coaxial/fibre Tie Cables (in multiples of eight (8) TLLC Services for 45 Mbps and 155 Mbps TLLC Service bandwidth) and its specification; and
 - (j) the Requesting Licensee's contact details.
- 3.2** The Requesting Licensee must request space at a Co-Location Site of a minimum of one (1) square metre to a maximum of ten (10) square metres.
- 3.3** SingTel shall acknowledge receipt of the Co-Location Request under clause 3.1 within three (3) Business Days and indicate whether the Co-Location Request is preliminarily accepted on a non-binding basis (subject to the completion of a Project Study under clause 4) or rejected. If the Co-Location Request is rejected, SingTel will provide the reasons for such rejection to the Requesting Licensee. SingTel shall recover the Co-Location Request fee for the reasonable cost of processing the Co-Location Request as provided in Schedule 9, irrespective of the outcome of the Co-Location Request.
- 3.4** SingTel may reject a Co-Location Request if:
- (a) the Requesting Licensee is not an FBO; or
 - (b) the Co-Location Request is not in the prescribed form; or
 - (c) the Co-Location Request does not contain the required information; or
 - (d) the space requested is not within the limits prescribed by clause 3.2; or
 - (e) there is no available space at the Co-Location Site as determined in accordance with clause 2; or
 - (f) acceptance of the Co-Location Request will give rise to significant health, safety, technical or engineering issues.
- 3.5** The Requesting Licensee acknowledges that the Co-Location Space allocated and the actual placement of the Co-Location Equipment shall be determined by SingTel. SingTel is not obligated to place the same Requesting Licensee's Co-Located Equipment adjacent to each other, provided that SingTel will use its reasonable endeavours to accommodate any reasonable request for adjacent placement made by the Requesting Licensee.

4. PROJECT STUDY

4.1 The Requesting Licensee may request in writing confirmation of the preliminary acceptance of the Co-Location Request by way of a Project Study within five (5) Business Days from the date of the preliminary acceptance of the Co-Location Request by SingTel. The provision of such a request by the Requesting Licensee shall constitute its agreement to pay the Project Study fee. If the Requesting Licensee does not request confirmation within this time, the Co-Location Request will lapse.

4.2 The Project Study normally entails at least two (2) site visits:

- (a) a preliminary site survey by SingTel to determine and assess the space, power, earth, fibre and Subscriber Loop Tie Cable routing and any Site Preparation Works required for Co-Location; and
- (b) a joint site survey with the Requesting Licensee.

4.3 Following notification by the Requesting Licensee under clause 4.1, SingTel shall schedule the preliminary site survey and a joint site survey. SingTel shall complete the Project Study within fifteen (15) Business Days of receipt of the notice in clause 4.1.

4.4 Following completion of the Project Study, SingTel shall provide the Requesting Licensee with the following information:

- (a) the estimated Charge for the Site Preparation Work, along with an outline of the major elements of the Site Preparation Work to be undertaken by SingTel;
- (b) the siting of the Requesting Licensee's Co-location Equipment including the location of the power/earth points and SingTel's Distribution Frame;
- (c) the location of the designated Lead-in Manhole and the direction of the Connection Duct;
- (d) the length of fibre cable required from the Lead-in Manhole to the Co-Location Space;
- (e) the length of the n x 64 Kbps Tie Cables (for below 2 Mbps TLLC Service bandwidth) and its associated connectors;

- (f) the length of 2 Mbps Tie Cables (for 2 Mbps TLLC Service bandwidth) and its associated connectors;
- (g) the length of coaxial/fibre Tie Cables (for 45 Mbps and 155 Mbps TLLC bandwidth) and its associated connectors; and
- (h) the number of Business Days expected to complete the Site Preparation Work.

4.5 SingTel shall be entitled to levy and receive the Project Study Fee provided in Schedule 9 irrespective of whether the Requesting Licensee proceeds with the Co-Location Request after completion of the Project Study.

5. SITE PREPARATION WORK

5.1 Within five (5) Business Days from the date of notification of the result of the Project Study under clause 4.4, the Requesting Licensee shall confirm in writing that it wishes to proceed with Co-Location and it agrees to pay the estimated Charges for Site Preparation Work.

5.2 SingTel shall complete the Site Preparation Work within the period advised under clause 4.4. If SingTel is unable to complete the Site Preparation Work within the advised period, SingTel shall notify the Requesting Licensee of a revised date for completion.

5.3 As part of the Site Preparation Work, SingTel shall construct two (2) 110mm Connection Ducts of one (1) metre from the designated Lead-in Manhole in the direction indicated in clause 4.4(b) for the Requesting Licensee to connect its ducts. SingTel shall construct the duct seal for the Connection Ducts constructed in SingTel's Lead-in Manhole.

5.4 Upon completion of the Site Preparation Work, SingTel will notify the Requesting Licensee and request the Requesting Licensee to attend the Co-Location Site for a final site inspection of the Co-Location Space.

6. INSTALLATION AND MAINTENANCE OF CO-LOCATION EQUIPMENT IN CO-LOCATION SPACE

6.1 The Parties agree to comply with the following procedures in connection with the installation and maintenance of Co-Location Equipment:

- (a) the Co-Location Equipment Installation and Maintenance Procedures at Attachment A and as amended by SingTel from time to time;
 - (b) the Standard Operating Procedures at Attachment B and as amended by SingTel from time to time; and
 - (c) the Physical Access Procedures at Attachment C and as amended by SingTel from time to time.
- 6.2** The Requesting Licensee shall be responsible for all terminations at its own equipment and for providing the associated cabling and connectors between the Requesting Licensee's Equipment and SingTel's distribution frame in order to facilitate the physical termination of the link to SingTel's distribution frame.
- 6.3** SingTel shall provide the distribution frame in connection with the routing of the Requesting Licensee's TLLC Service and shall perform the physical installation and termination of the Requesting Licensee's cabling to SingTel's distribution frame.
- 6.4** The Requesting Licensee shall pay SingTel the one-time Charges for the installation and termination of the Requesting Licensee's Tie Cables in accordance with Schedule 9.

7. TERM OF LICENCE

- 7.1** A licence of each Co-Location Space under this Schedule shall commence on the date the Requesting Licensee confirms its acceptance of the Charges for Site Preparation Work at the Co-Location Site and continues for a period of two (2) years unless terminated earlier in accordance with this Schedule.
- 7.2** SingTel may terminate the licence of Co-Location Space at any time with immediate effect by giving notice to the Requesting Licensee if the Requesting Licensee fails to complete the installation of its Co-Location Equipment within thirty (30) Business Days under Attachment A. If the Requesting Licensee's failure to complete installation is attributable to circumstances beyond the Requesting Licensee's reasonable control, SingTel will grant a reasonable extension of time for installation to the Requesting Licensee at the Requesting Licensee's request. A Requesting Licensee's request under this clause must describe the circumstances beyond the Requesting Licensee's control and such request must be received prior to the expiry of the aforementioned thirty (30) Business Day period.

- 7.3 The Requesting Licensee may terminate a licence of Co-Location Space under this Schedule by giving SingTel no less than six (6) months written notice. Termination of the licence will take effect from the date specified in the notice.
- 7.4 Subject to clause 13.2 of the RIO Agreement where SingTel is the terminating party, either Party (**Terminating Party**) may immediately terminate a licence of Co-Location Space at a Co-Location Site if the other Party is in breach of this Schedule and such breach remains unremedied for a period of five (5) Business Days after receiving written notice from the Terminating Party to do so.
- 7.5 Subject to clause 13.2 of the RIO Agreement, SingTel may immediately terminate a licence of Co-Location Space at a Co-Location Site if:
- (a) the Requesting Licensee is no longer an FBO;
 - (b) in SingTel's reasonable opinion, the Requesting Licensee is using the Co-Location Space in contravention of an applicable law, licence, code, regulation or direction and SingTel has the necessary confirmation from the relevant Governmental Agencies that the Requesting Licensee is in contravention of the applicable law, licence, code, regulation or direction;
 - (c) the licence of Co-Location Space causes or is likely to cause physical or technical harm to the SingTel Network or Co-Location Site, including but not limited to causing damage, interfering with or causing deterioration in the operation of the SingTel Network;
 - (d) the Co-Location Equipment is used for a purpose other than for connection for the supply of the TLLC Service to the Requesting Licensee under this RIO Agreement;
 - (e) the Requesting Licensee's Co-Location Equipment is not connected in respect of the supply of the TLLC Service to the Requesting Licensee under this RIO Agreement;
 - (f) the Requesting Licensee removes or abandons its Co-Location Equipment;
 - (g) the Requesting Licensee locates equipment other than Co-Location Equipment in the Co-Location Space;
 - (h) the Co-Location Space has become unsafe or unsuitable for its purpose; or

- (i) SingTel's right to own, maintain or operate the Co-Location Site is revoked or terminates or expires.
- 7.6** SingTel may give the Requesting Licensee no less than six (6) months notice at any time during the term that the licence at a Co-Location Space is to be terminated because of the closure of that Co-Location Site. The Requesting Licensee shall bear its own cost associated with the closure of a Co-Location Site. In the event that the Requesting Licensee requests assistance from SingTel within thirty (30) Business Days after receiving a notice under this clause to provide an alternative solution to the Co-Location Space which is being terminated SingTel will use its reasonable endeavours in providing such assistance. SingTel will take reasonable measures to minimise disruptions to the Requesting Licensee in the provision of its services to Customers arising from the termination of the Co-Location Site. The Requesting Licensee shall remain solely responsible for making any alternative arrangements as are necessary to continue to provide its Customers with services. Nothing in this clause prevents SingTel from terminating the licence at a Co-Location Space at the end of the six (6) month notice period under this clause provided that SingTel has complied with this clause.
- 7.7** Upon expiry or termination of the licence of Co-Location Space:
- (a) the Requesting Licensee must discontinue the use of its Co-Location Equipment and remove its Co-Location Equipment from the Co-Location Site within thirty (30) Business Days after the expiry of the Requesting Licensee's licence or from the date of termination of Co-Location Space, whichever is the earlier.
 - (b) SingTel shall reinstate the Co-Location Space and recover/reinstate all cables/supports/opening and recover the reasonable cost of such reinstatement from the Requesting Licensee.
- 7.8** If the Requesting Licensee fails to discontinue the use of its Co-Location Equipment and remove its Co-Location Equipment under clause 7.7, SingTel shall remove the Requesting Licensee's Co-Location Equipment and reinstate the Co-Location Site to its original condition. The Requesting Licensee shall pay to SingTel all reasonable costs associated with the work undertaken by SingTel including the disposal of the Co-Location Equipment. In such event, the Requesting Licensee shall have no claim whatsoever against SingTel.
- 7.9** Upon termination of the licence of Co-Location Space, any physical access granted to the Co-Location Site shall also be terminated.

7.10 Upon termination by the Requesting Licensee under clause 7.3 or by SingTel under clauses 7.2, 7.4 or 7.5 (except clause 7.5(h) and (i)) of a licence of a Co-Location Space prior to the expiry of the licence term referred to in clause 7.1, the following Charges shall be recovered from the Requesting Licensee but only where SingTel has, at its discretion, constructed additional Co-Location Space and has not recovered the full cost of Site Preparation Work from the Requesting Licensee from upfront Site Preparation Work Charges:

- (a) licence Charges for the remainder of the original licence term; and
- (b) outstanding pro-rata Site Preparation Work Charges.

8. SUB-LICENSING

8.1 The Requesting Licensee must not assign the licence in respect of or sub-let the Co-Location Space at the Co-Location Site.

9. ADDITIONAL CO-LOCATION SPACE AND CO-LOCATION EQUIPMENT

9.1 If the Requesting Licensee wishes to replace, modify or rearrange existing Co-Location Equipment in the Co-Location Space or to install additional Co-Location Equipment in the Co-Location Space, the Requesting Licensee must submit a request in respect of the replacement, modification, rearrangement or additional Co-Location Equipment. The process of ordering and provisioning in clause 3 shall apply.

9.2 If the Requesting Licensee wishes to provision additional Tie Cables related to clause 3.1 (g), (h) and (i) of this Schedule, the Requesting Licensee must submit a request in respect of the additional Tie Cables in the form of Annex 8E.2. The process of ordering and provisioning in clause 3 shall apply.

9.3 Requests for additional Co-Location Space at Co-Location Sites shall be treated as a separate Co-Location Request and the process of ordering and provisioning in clause 3 shall apply.

ANNEX 8E.1

LIST OF POSSIBLE CO-LOCATION SITES FOR POA

Serial Number	Description of POA Co-Location Site
1	Ang Mo Kio Telephone Exchange
2	Ayer Rajah Telephone Exchange
3	Bedok Telephone Exchange
4	Bukit Panjang Telephone Exchange
5	Changi Telephone Exchange
6	Central Telephone Exchange
7	East Telephone Exchange
8	Geylang Telephone Exchange
9	Hougang Telephone Exchange
10	Jurong East Telephone Exchange
11	Jurong Telephone Exchange
12	Jurong West Telephone Exchange
13	Katong Telephone Exchange
14	North Telephone Exchange
15	Paya Lebar Telephone Exchange
16	Pasir Ris Telephone Exchange
17	Queenstown Telephone Exchange
18	Telok Blangah Telephone Exchange
19	Tampines Telephone Exchange
20	Tuas Telephone Exchange
21	Woodlands Telephone Exchange
22	Yio Chu Kang Telephone Exchange
23	City Telephone Exchange
24	City South Telephone Exchange
25	Orchard Telephone Exchange

ANNEX 8E.2

REQUEST FOR CO-LOCATION SPACE

The Requesting Operator

Date of Application : [Date] Application Reference Number : [Number]

Request for Physical Co-Location is sought for the purpose of : _____
[TLCC / WHOLESALE LOCAL LEASED CIRCUIT (TAIL CIRCUITS)]

Address of Co-location site : [Address / Building Name]

Type of Equipment to be Installed : [Description / Manufacturer / Dimensions]

Co-Location Space Required : [Dimensions and floor area to be occupied]

Power Requirements : [Power Consumption]

Floor Loading of Equipment : [Weight of Equipment Fully Installed]

Type of Fibre and its Diameter : [Number of Fibre Strand & Cable Diameter]

Tie-Cable Requirements

Number of Circuits : [Specifications]
For n x 64 Kbps Tie-Cables in multiples of eight (8) circuits and its specifications

Number of Circuits : [Specifications]
For 2 Mbps Tie-Cables in multiples of eight (8) circuits and its specifications

Number of Circuits : [Specifications]
For Coaxial / Fibre Tie-Cables in multiples of eight (8) circuits and its specifications

On Behalf of the Requesting Operator

Sign : _____ Name of Requesting Licensee: _____

Name : _____

Designation : _____

Department : _____

Contact Number : _____ Company Stamp : _____

Fax Number : _____

SingTel's Reply to the Requesting Operator

Application returned - incomplete/illegible

Not Approved Reason for Rejection : _____

Approved SingTel Approval Code : _____

On Behalf of SingTel

Sign : _____ Contact Number : _____

Name : _____ Fax Number : _____