

SCHEDULE 1

PHYSICAL AND VIRTUAL (DISTANT) INTERCONNECTION

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CONTENTS

- SCHEDULE 1A - PHYSICAL AND VIRTUAL (DISTANT) INTERCONNECTION FOR FBOs**
 - 1A ANNEXES**
- SCHEDULE 1B - VIRTUAL (DISTANT) INTERCONNECTION FOR SBOs**
 - 1B ANNEXES**

SCHEDULE 1

PHYSICAL AND VIRTUAL (DISTANT) INTERCONNECTION

1. GENERAL

- 1.1** This Schedule details the establishment of Interconnection between SingTel's Network and the Requesting Licensee's Network and describes the forecasting and provisioning procedures for Interconnection provided under this RIO Agreement.
- 1.2** Schedule 1A and 1B contain the details on the Network interface requirements and specifications for Interconnection between SingTel's Network and the Requesting Licensee's Network. Schedule 1A details the requirements for Physical or Virtual (Distant) Interconnection for a Requesting Licensee who is an FBO for Interconnection to SingTel's Interconnect Gateway Switches, while Schedule 1B details the requirements for Virtual (Distant) Interconnection for SBOs for Interconnection to SingTel's SBO Gateway Switches.
- 1.3** If the Requesting Licensee is an FBO, the Parties will comply with Schedule 1A.
- 1.4** If the Requesting Licensee is an SBO, the Parties will comply with Schedule 1B.
- 1.5** If SingTel requires Physical Interconnection or Virtual (Distant) Interconnection with the Requesting Licensee, the Requesting Licensee will provide such Interconnection on reciprocal terms and conditions to those set out in this Schedule 1.

SCHEDULE 1A

PHYSICAL AND/OR VIRTUAL (DISTANT) INTERCONNECTION FOR FBOs

SCHEDULE 1A - PHYSICAL AND/OR VIRTUAL INTERCONNECTION FOR FBOS

1. GENERAL	1
2. INTERCONNECT CONFIGURATION	2
3. POINT OF INTERCONNECTION	4
4. ALTERNATIVE INTERCONNECT CONFIGURATIONS AND POINTS OF INTERCONNECTION	5
5. PHYSICAL INTERCONNECTION	6
6. VIRTUAL (DISTANT) INTERCONNECTION	7
7. TECHNICAL REQUIREMENTS AND SPECIFICATIONS	7
8. FORECASTING AND PROVISIONING OF INTERCONNECT CAPACITY	9
9. DECOMMISSIONING	13
SCHEDULE 1B - VIRTUAL INTERCONNECTION FOR SBOS	1
1. GENERAL	1
2. INTERCONNECT CONFIGURATION	1
3. POINT OF INTERCONNECTION	3
4. TECHNICAL REQUIREMENTS AND SPECIFICATIONS	4
5. DECOMMISSIONING	5
SCHEDULE 1 - ANNEXURES	
1. TESTING PRINCIPLES	26
2. PRE-REQUISITES FOR INTERCONNECT TESTING	26
3. TESTING ITEMS	26
4. TIMELINE FOR TESTING	27
5. DAILY TIME TABLE FOR INTERCONNECT TESTING	27
6. TESTING RESULTS	28
7. CHARGES FOR INTERCONNECT TESTING	28
8. CANCELLATION AND DELAY IN TESTING	28
SECTION 2 - SS7 INTERWORKING TESTING MANUAL	
1. INTRODUCTION	33

2.	TESTING ACTIVITIES	33
SECTION 2A : SS7 MTP LEVEL 2 TEST SPECIFICATION - Q.781 RECOMMENDATION		
1.	LINK STATE CONTROL	36
2.	TRANSMISSION FAILURE	36
SECTION 2B : SS7 MTP LEVEL 3 TEST SPECIFICATION – Q.782 RECOMMENDATION		
1.	SIGNALLING LINK MANAGEMENT	39
2.	SIGNALLING MESSAGE HANDLING	39
3.	CHANGEOVER	39
4.	CHANGEBACK	39
5.	SIGNALLING LINK TEST	40
SECTION 2C - SS7 ISUP BASIC CALL CONTROL TEST SPECIFICATION - Q.784 RECOMMENDATION		
1.	CIRCUIT SUPERVISION	43
2.	NORMAL CALL SETUP	44
3.	NORMAL CALL RELEASE	45
4.	UNSUCCESSFUL CALL SETUP	45
5.	ABNORMAL SITUATION DURING CALL	46
6.	BEARER SERVICES	47
SECTION 2D - SS7 ISUP PROTOCOL TEST SPECIFICATION FOR SUPPLEMENTARY SERVICES - Q.785 RECOMMENDATION		
1.	CLI	52
SECTION 2E - INTERCONNECT LINKS AND INTERCONNECT CONFIGURATION BETWEEN SINGTEL AND FBO		
		55
SECTION 2F - INTERCONNECT LINKS & INTERCONNECT CONFIGURATION BETWEEN SINGTEL AND SBO		
		57
ANNEX B - OPERATIONAL PROCEDURES		
1.	INTRODUCTION	59
2.	FAULT HANDLING PROCEDURES	59
3.	TARGET RESPONSE TIMES	61
4.	FAULT ESCALATION	62
5.	MAJOR SERVICE INTERRUPTION	63

6. PLANNED ENGINEERING WORKS	64
7. TESTING AND MONITORING	65
APPENDIX 1	66
APPENDIX 2	67
APPENDIX 3	68

SCHEDULE 1A

PHYSICAL AND/OR VIRTUAL (DISTANT) INTERCONNECTION FOR FBOs

1. GENERAL

- 1.1 Each Party agrees to interconnect and keep interconnected their respective Networks subject to and in accordance with the terms and conditions of this Schedule 1A.
- 1.2 For the avoidance of doubt and unless the Parties agree otherwise, where both Parties have established Interconnection of their respective Networks prior to the RIO Review Date:
- (a) the existing interconnect configuration that applies between each Party's respective Network at the RIO Review Date will continue to apply; and
 - (b) the Parties need not change the Interconnection configuration of their respective Networks as may be required under this Schedule 1A.

SingTel Comment: Clause 1.2

Clarifying amendment only. SingTel has introduced clause 1.2 to ensure that Requesting Licensees that have already interconnected their Network with the SingTel Network at the RIO Review Date are not subject to any adverse impact at the time the amendments to this Schedule take effect.

- 1.3 The Requesting Licensee will notify SingTel whether it requires Physical Interconnection or Virtual (Distant) Interconnection under this Schedule. If there is insufficient Co-location Space at a SingTel Co-location Site to permit Physical Interconnection, SingTel shall provide Virtual (Distant) Interconnection under this Schedule 1A to the Requesting Licensee. The determination of whether sufficient Co-location Space exists will be made pursuant to the terms and conditions specified in Schedule 8A.
- 1.4 The provisions of this Schedule 1A apply to both Physical Interconnection and Virtual (Distant) Interconnection, unless otherwise indicated.
- 1.5 This Schedule 1A only applies to a Requesting Licensee which is an FBO.

2. INTERCONNECT CONFIGURATION

- 2.1 SingTel's Network is divided into two (2) sectors, comprising an east zone and a west zone. Subject to clause 2.5, the Requesting Licensee must interconnect its Network with the SingTel Network at each of SingTel's Interconnect Gateway Switches (**IGS**) in both the east zone and west zone as specified in Section 2E of Annex A.
- 2.2 Both Parties' Networks shall interface at IGS level. For the avoidance of doubt, the Requesting Licensee must designate its Network for interconnection with the SingTel Network on a reciprocal basis.

SingTel Comment: Clause 2.2

Please refer to SingTel's comments in relation to clause 3 of the main body of the RIO Agreement.

- 2.3 The Requesting Licensee must manage and maintain the Interconnection Links, taking into account the need for growth, diversity and security in traffic routes and signalling links.
- 2.4 Unless otherwise agreed and subject to clause 2.5, the Requesting Licensee must interconnect its Network with the SingTel Network, whether by way of Physical Interconnection or Virtual (Distant) Interconnection, at each of SingTel's IGS in the east zone and the west zone.
- 2.5 If the Requesting Licensee wishes to adopt an alternative interconnect configuration with its Network interconnecting at only one (1) SingTel IGS in the east zone and one (1) SingTel IGS in the west zone, the Requesting Licensee may only do so with SingTel's agreement and must be prepared to accept a performance level which is different to that applicable to Interconnection at each of SingTel's IGS in the east zone and west zone.
- 2.6 Initially, the Requesting Licensee shall interconnect only one (1) of its IGS(s) to any given SingTel IGS. Any subsequent Interconnection of another Requesting Licensee IGS to that SingTel IGS is subject to mutual agreement.
- 2.7 The Minimum Interconnection Capacity for Interconnection by the Requesting Licensee to a SingTel IGS is two (2) 2Mbps E1 links.

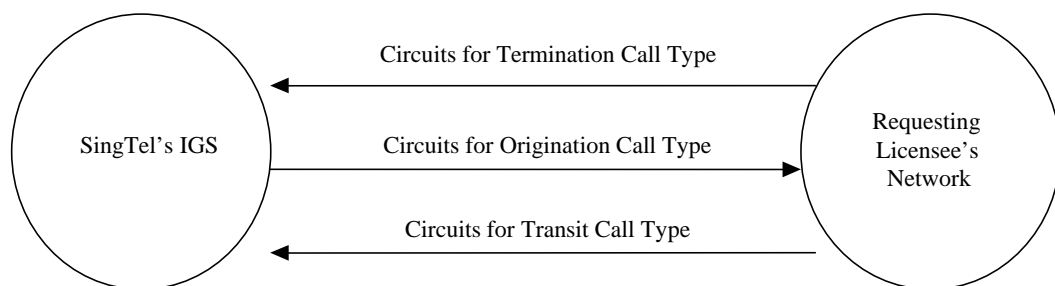
2.8 If the Requesting Licensee interconnects to SingTel’s Network with Interconnect Capacity less than the Minimum Interconnection Capacity, the Requesting Licensee acknowledges that the Network performance may not be equivalent to other Licensees which have fulfilled the Minimum Interconnection Capacity for Interconnection to each of SingTel’s IGS in the east zone and west zone. SingTel shall not be liable for any degradation in Call handling and/or Network performance experienced by the Requesting Licensee who does not fulfil the Minimum Interconnection Capacity.

2.9 An Interconnection Link may comprise different types of circuit groups. The circuits in each circuit group may convey traffic in a specific direction (one-way) as shown below. The Requesting Licensee must designate the Interconnection Link for each type of circuit group. SingTel shall assign the Circuit Identification Code (**CIC**).

SingTel Comment: Clause 2 generally

SingTel has amended clause 2 to make it clear that a Requesting Licensee must interconnect at each IGS in the east zone and west zone. The amendments to clause 2 also provide a clearer description of SingTel’s configuration of IGSs.

2.10



Circuit Groups

2.11 If SingTel or the Requesting Licensee wishes to interconnect their respective Networks at additional IGSs, that Party may request an additional POI and the Parties will negotiate in good faith in relation to the interconnect configuration applicable to such additional Interconnection. The Party that wishes to interconnect their Network at additional IGSs is liable for any costs in relation to any additional POI.

SingTel Comment: Clause 2.11

The Requesting Licensee should be liable for the costs associated with the provision of additional POIs. A request for an additional POI results in SingTel incurring costs that would not otherwise be payable if the Requesting Licensee requested interconnection in accordance with clause 2.1.

2.12 Neither Party shall be required to commence work on the installation of Network Facilities to support a new POI under clause 2.11 until the Parties have agreed on the interconnect configuration to apply under clause 2.11.

3. POINT OF INTERCONNECTION

3.1 The Parties agree that the POI will be determined by the following criteria:

(a) if the Parties establish two (2) Interconnection Links, the first link to carry SingTel's traffic and the second link to carry the Requesting Licensee's traffic, the POI for each link may be established at the Digital Distribution Frame (**DDF**) (or comparable equipment) of the Party providing the Call Origination, Call Termination and Call Transit Service; or

(b) if the Parties establish only one (1) Interconnection Link to carry each Party's traffic to the other Party's Network, the POI may be at a notional mid-point of the Interconnection Link; or

(c) the POI may be established at such other interconnection configurations as the Parties may agree on.

3.2 Each Party is responsible for the provisioning and maintenance of Network Facilities (including those Network Facilities which form part of the Interconnect Links and the transmission equipment) on its "side" of the POI.

3.3 The cost of the installation, maintenance and operation of the Network Facilities on each Party's side of the POI which form part of the Interconnect Link(s) shall be borne by that Party.

3.4 Each Party will ensure that its Network Facilities which form part of the Interconnection Link(s) are provisioned and maintained with Interconnect Capacity in accordance with the ordered Capacity under this Schedule 1A.

3.5 The Requesting Licensee may request the modification of an Interconnection Link by completing the request form set out in Annex 1A.3. SingTel will consider the request

for modification and if SingTel agrees to such a modification, SingTel will undertake the modification in accordance with that request. The Requesting Licensee will be liable for any costs incurred by SingTel in performing the modification of the Interconnection Link.

4. ALTERNATIVE INTERCONNECT CONFIGURATIONS AND POINTS OF INTERCONNECTION

- 4.1** The Requesting Licensee may request alternative interconnect configurations and locations for the POI at any technically feasible point. The Requesting Licensee that requests an alternative interconnect configuration and location for the POI is liable for any costs incurred by SingTel in relation to that alternative interconnect configuration and location for the POI.

SingTel Comment: Clause 4.1

The Requesting Licensee should be liable for SingTel's costs in relation to the provision of an alternative interconnect configuration and location for the POI. A request by a Requesting Licensee for an alternative interconnect configuration and location for the POI will result in SingTel incurring costs that would not otherwise be payable if the Requesting Licensee requested interconnection in accordance with clause 2.1. SingTel should be able to recover such costs from the Requesting Licensee.

- 4.2** On receipt of a request under clause 4.1 in respect of an alternative interconnect configuration or POI location specified in the Code, SingTel and the Requesting Licensee will promptly discuss the Requesting Licensee's request.
- 4.3** If, thirty (30) Calendar Days after the receipt of a request under clause 4.1 and following discussions under clause 4.2, the Requesting Licensee wishes to pursue the alternative interconnect configuration and locations for the POI and SingTel has agreed with the alternative interconnect configuration and locations for the POI, SingTel will commence the formulation of terms and conditions to incorporate into this RIO Agreement.

SingTel Comment: Clause 4.3

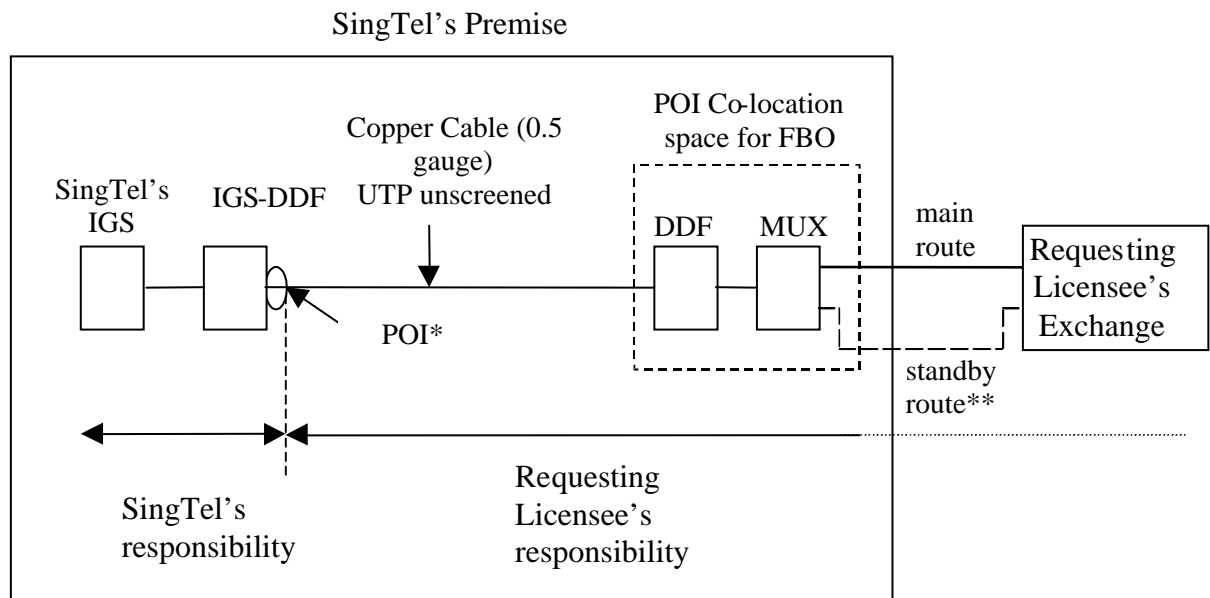
SingTel has amended clause 4.3 to make it clear that the Requesting Licensee cannot obtain an alternative interconnect configuration and locations for the POI without the agreement of SingTel. SingTel will not agree to an alternative interconnect configuration if such a configuration is not technically feasible, or would result in SingTel incurring

unreasonable costs (notwithstanding the fact that SingTel has requested that such costs be recoverable).

4.4 SingTel will submit terms and conditions to the Authority for approval and incorporation into the RIO and this RIO Agreement within sixty (60) Calendar Days after the receipt of a request under clause 4.1. Alternatively, SingTel may seek an exemption from the relevant aspects of the Code.

5. PHYSICAL INTERCONNECTION

5.1 Figure 1 depicts a possible configuration of the Physical Interconnection of the Interconnection Links between SingTel’s Network and the Requesting Licensee’s Network and the location of the POI.



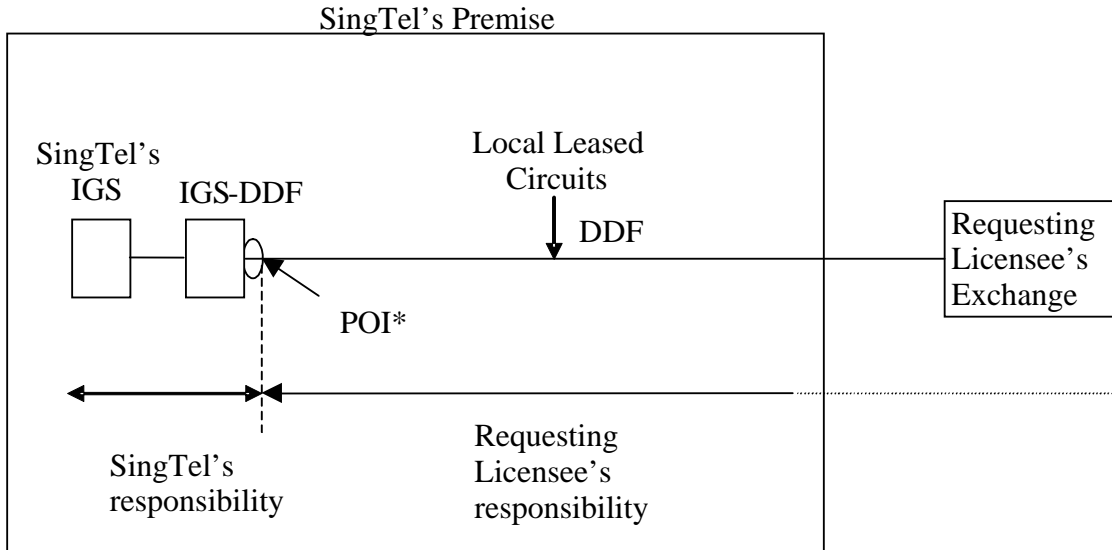
* dictates the responsibilities of each Party on its side of the POI
 ** when applicable

Figure 1: FBO Physical Interconnection

5.2 The provisions in Schedule 8 will apply to access to and Co-location of Co-location Equipment at SingTel’s IGS for Physical Interconnection.

6. VIRTUAL (DISTANT) INTERCONNECTION

6.1 Figure 2 depicts a possible configuration of the Virtual (Distant) Interconnection between SingTel’s Network and the Requesting Licensee’s Network and the location of the POI.



* dictates the responsibilities of each party on its side of the "POI"

Figure 2: FBO Virtual (Distant) Interconnection

6.2 The Requesting Licensee shall acquire Local Leased Circuits from SingTel to form part of the Interconnection Link. The Requesting Licensee’s leased Interconnection Link shall consist of multiple 2 Mbps (E1) circuits terminated at a DDF in SingTel’s IGS.

6.3 On the Requesting Licensee’s request, SingTel will lease Local Leased Circuits at 2Mbps (E1) G.703 interface to the Requesting Licensee’s Network based on SingTel’s standard terms and conditions for supply of Local Leased Circuit service.

7. TECHNICAL REQUIREMENTS AND SPECIFICATIONS

7.1 Transmission

7.1.1 The Parties’ shall interface at 2Mbps level and comply with ITU-T Rec G.703.

7.2 Signalling

7.2.1 The Parties shall comply with the Common Channel Signalling (**CCS**) No.7 Signalling System – Message Transfer Part (**MTP**) and ISDN User Part as specified in Section 1 of Annex A.

7.2.2 The Requesting Licensee shall obtain its own Signalling Point Code from the Authority.

7.2.3 The Parties' IGS shall interwork on associated mode of signalling for the establishment of Interconnected Calls between the Parties' Network.

7.2.4 Both Parties shall provide CCS No. 7 Signalling System (**SS7**) Signalling Linkset comprising of two (2) SS7 Signalling Links on each Interconnect Link.

7.2.5 The Parties shall adhere to additional SS7 signalling requirement as follows:

(a) The Calling Party Number and Redirecting Number if available shall be conveyed for all calls across the Network Interconnection without manipulation;

(b) The Dummy CLI received from Mobile Operators from inbound and outbound roamers shall be an eight (8) digit Dummy CLI;

(c) The number dialled by the calling subscriber shall not be changed or amended for the routing of international outgoing calls from one Party's Network to the other Party's Network. In addition, the Nature of Address (**NOA**) of the Called Party Number shall be set to 'International';

(d) Each Party's Network shall deliver international incoming Calls to the terminating Party's Network with the international Call indicator 'A' bit of FCI parameter of the IAM set to '1'.

7.3 Synchronisation

7.3.1 The Parties shall interwork with each other on plesiochronous mode of synchronisation.

7.4 Routing

7.4.1 The Parties shall route Interconnected Calls in accordance with the agreed arrangements applicable to that Call Type under Schedule 2.

7.5 Interconnect Testing

7.5.1 The Parties shall comply with the testing procedures in Section 1A of Annex A.

8. FORECASTING AND PROVISIONING OF INTERCONNECT CAPACITY

8.1 Sections 8.2 to 8.14 apply to Forecasts to be provided by each Party (**the Forecasting Party**) in relation to Interconnect Capacity, if the Forecasting Party reaches a minimum Interconnect Capacity of sixty-three (63) EIs for Interconnection with the other Party's (**the Supplying Party**) Network.

8.2 Where Interconnect Capacity is below sixty-three (63) EIs, each Party shall provide the Interconnect Capacity without the need for a Forecast. Each Party (**Requesting Party**) shall apply for the Interconnect Capacity under clause 8.15.

8.3 The Forecasting Party shall provide to the Supplying Party the Forecasts for Interconnect Capacity on or near 1 March and 1 September of each year and in the formats in Annex 1A.1.

8.4 The Forecasts shall be for periods commencing six (6) months from 1 April and 1 October (**Forecast Date**) respectively, and be for a period of thirty-six (36) months, in intervals of six (6) months for the first twelve (12) months, and yearly thereafter.

8.5 The Supplying Party will respond to a Forecast within fifteen (15) Business Days of receipt, or such other period as may be agreed. The response shall be either:

- (i) an acknowledgment that the Supplying Party is able to provide the forecasted Interconnect Capacity in the first six (6) month period by a particular date (**Forecast Delivery Date**); or
- (ii) an acknowledgment that the Supplying Party is able to provide the forecasted Interconnect Capacity in the first six (6) month period, but not be able to provide those quantities in accordance with the Forecast timeframes; or
- (iii) an advice that the Supplying Party is unable to provide the forecasted Interconnect Capacity in the first six (6) month period as procurement is required.

8.6 Where procurement is required in order to meet the Forecast, and where the Supplying Party advises the Forecasting Party pursuant to clause 8.5, the Supplying Party shall seek confirmation of the Forecast from the Forecasting Party. Upon

confirmation by the Forecasting Party, the Supplying Party shall complete the procurement no later than it would complete such procurement for itself.

- 8.7** If the Forecasting Party seeks Interconnect Capacity at a level other than the Forecast level or on a Forecast Delivery Date other than the agreed Forecast Delivery Date, it may make a request to the Supplying Party to provide the revised level of capacity or revise the Forecast Delivery Date. The Supplying Party will use its reasonable endeavours to undertake and complete a feasibility study within thirty (30) Business Days, and the Forecasting Party shall pay a fee to the Supplying Party to recover the reasonable costs involved in the conduct of the study in response to the request

SingTel Comments: Clause 8.7

SingTel has amended clause 8.7 to take account of situations where the complicated nature of a feasibility study prevents the Supplying Party from undertaking and completing such a study within the required period of 30 Business Days. While most feasibility studies should be completed within the requisite period, the proposed amendment to clause 8.7 provides a reasonable degree of flexibility in respect of the Supplying Party satisfying the 30 Business Day timeframe where the complicated nature of the feasibility study prevents strict observance of such a timeframe.

- 8.8** The Supplying Party is under no obligation to provide Interconnect Capacity other than in accordance with the accepted forecast capacity requirements and the accepted Forecast delivery times. Where there is a dispute as to forecast capacity requirements, the Supplying Party shall provide that level of Interconnection Capacity that it considers reasonable pending resolution of the dispute under Schedule 11.
- 8.9** Clauses 8.6 and 8.7 are not intended to create a process in substitution for the normal forecasting process.
- 8.10** The Forecasting Party agrees that:
- (a) the first six (6) months of each Forecast given by it is a commitment for the full quantity of Interconnect Capacity which the Supplying Party will necessarily supply or install in order to meet that Forecast; and
 - (b) it will pay any Charges calculated in accordance with clause 8.13; and
 - (c) there shall be no variation in the Forecasts as provided to the Supplying Party.

8.11 If, following acceptance of a Forecast, the Supplying Party is unable to provide the Interconnect Capacity or provide the Interconnect Capacity by the Forecast Delivery Date, in whole or part, it must advise the Forecasting Party promptly and both Parties must, where practicable, negotiate a new delivery timetable. To assist in this negotiation, the Supplying Party must offer alternatives where available.

8.12 Delivery of Forecast Capacity

8.12.1 The Parties shall use their reasonable endeavours to ensure that its Network Facilities on its side of the relevant POI are provisioned on the Forecast Delivery Date (or as otherwise agreed) and maintained in accordance with the Forecasts.

8.12.2 Delivery of Interconnect Capacity is taken to occur on the Forecast Delivery Date or on such other date as may be agreed (as applicable) provided that the Supplying Party has advised that it is ready to commence testing.

8.13 Recovery for Over Forecasting

8.13.1 If the Actual Usage by the Forecasting Party of the Interconnect Capacity is greater than or equal to the Minimum Utilisation Percentage, no over forecasting Charges shall apply.

8.13.2 If the Actual Usage by the Forecasting Party of the Interconnect Capacity is less than the Minimum Utilisation Percentage, the Forecasting Party shall pay the amount calculated in accordance with Schedule 9 until such time as Actual Usage reaches the Minimum Utilisation Percentage.

SingTel Comment: Clause 8.13.2

This a clarifying amendment only. The Minimum Utilisation Percentage is already designated to be 80 percent of the Forecasting Party's Forecast (see clause 8.13.4). There is no need to refer to 80 percent in this clause.

8.13.3 Where a dispute arises in respect to the Actual Usage under this clause 8.13, the matter will be referred for resolution in accordance with Schedule 11 – Dispute Resolution.

8.13.4 For the purposes of this clause 8.13, the Minimum Utilisation Percentage means:

(a) for the first twelve (12) months of this RIO Agreement, when a Party is required to provide a Forecast, seventy-five (75) percent of the Forecasting Party's Forecast; and

- (b) in all other cases, eighty (80) percent of the Forecasting Party's Forecast.

8.14 Virtual (Distant) Interconnection

8.14.1 Notwithstanding anything else in this clause 8, the Requesting Licensee remains responsible for Forecasting and ordering sufficient Capacity on Local Leased Circuits to enable Virtual (Distant) Interconnection to occur.

8.15 Ordering and Provisioning Procedure for Interconnect Capacity Without Forecast

8.15.1 The Requesting Party shall submit its Request for Interconnect Capacity Without Forecast to the Supplying Party in the form of Annex 1A.2.

8.15.2 The Supplying Party shall process all Requests for Interconnect Capacity Without Forecast on a 'first come, first served' basis.

8.15.3 The Supplying Party shall respond to a Request of Interconnect Capacity Without Forecast within fifteen (15) Business Days, or any other period as may be agreed, of receipt of such request, or such other period as may be agreed. The response shall be either:

- (a) an acknowledgement that the Supplying Party is able to provide the full Interconnect Capacity without Forecast by the "**Required By Date**";
- (b) an acknowledgement that the Supplying Party is able to provide the Interconnect Capacity without Forecast, but not be able to provide the quantities by the "**Required By Date**"; or
- (c) an advice that the Supplying Party is unable to provide the Interconnect Capacity without Forecast as procurement is required.

8.15.4 When procurement is required in order to meet the request, and the Supplying Party advises the Requesting Party pursuant to clause 8.15.3, the Supplying Party shall seek confirmation of the required Capacity from the Requesting Party. Upon confirmation, the Supplying Party shall complete the procurement no later than it would complete such procurement for itself.

9. DECOMMISSIONING

- 9.1 Subject to clauses 9.2 and 9.3, a Party (**Decommissioning Party**) may, for whatever reason upon giving no less than six (6) months prior written notice to the other Party (**Decommissioning Period**), close, replace or relocate any IGS in respect of which an Interconnection Link is connected, decommission an Interconnection Link or close a POI (**Decommissioning**).
- 9.2 (a) Subject to paragraph (b), the Decommissioning Party shall be responsible for and bear all direct costs incurred by both Parties in carrying out the Decommissioning. Direct costs are limited to removal of equipment and cabling at the POI or IGS. Each Party will bear its own costs of recovering its own part of the Interconnection Link.
- (b) When the request for Decommissioning is at the direction of a Third Party pursuant to a legal obligation binding on the Decommissioning Party, each Party shall bear its own costs associated with the Decommissioning together with the direct costs incurred by that Party in respect of the establishment of alternative arrangements necessary to support the provision of Call Origination, Call Transit and Call Termination Services provided at the time of the Decommissioning.
- 9.3 If Decommissioning is to occur where Physical Interconnection has been established, the Decommissioning Party will, if requested by the other Party within thirty (30) Business Days after receiving a notice under clause 9.1, offer alternative interconnection solutions to the other Party. The alternative interconnection solutions offered must, to the extent feasible, be comparable in terms of cost and functionality and, if accepted by the other Party within sixty (60) Calendar Days from the date of the offer, must permit the full implementation of the alternative interconnection solutions. Nothing in this clause prevents the Decommissioning from occurring on the expiry of the Decommissioning Period provided that the Decommissioning Party has complied with this clause 9.3.
- 9.4 If Decommissioning is to occur where Virtual (Distant) Interconnection has been established:
- (a) the Requesting Licensee is the Decommissioning Party, the Requesting Licensee must also comply with the terms and conditions under which Local Leased Circuits are supplied by SingTel (including the payment of any early termination payments); or

- (b) SingTel is the Decommissioning Party, SingTel will arrange for the connection of Local Leased Circuits to the alternative or relocated IGS or POI prior to the Decommissioning.

9.5 Upon the happening of an event which causes or is likely to cause significant damage to the Network of a Party or which endangers or is likely to endanger the health or safety of any person (**Emergency Event**), that Party may close or replace its IGS or a POI or Decommission an Interconnection Link without prior written notice to the other Party, provided that it notifies the other Party as soon as practicable that the Emergency Event exists and that emergency relocation work is being or will be performed. The costs incurred as a result of, or in connection with, a closure or replacement of an IGS or a POI or Decommissioning of an Interconnection Link under this clause 9.5 shall be borne as follows:

- (a) where the occurrence of the Emergency Event was caused as a result of the negligence or wilful act or omission of the first-mentioned Party, its employees, agents or contractors, that Party shall bear the costs associated with the closure, replacement or Decommissioning incurred by both Parties; and
- (b) where the occurrence of the Emergency Event was not caused as a result of the negligence or wilful act or omission of the first-mentioned Party, its employees, agents or contractors, each Party shall bear its own costs associated with the closure, replacement or Decommissioning.

ANNEX 1A.2 – INTERCONNECT CAPACITY WITHOUT FORECAST

Request For Interconnect Capacity Without Forecast			
Name of Operator:			
Purchase Order No:			
Required By Date:			
Operator's Switch:			
SingTel's Switch:			
	Circuits for Origination Call Type	Circuits for Termination Call Type	Circuits for Transit Call Type
No. of E1s			

ANNEX 1A.3 – REQUEST FORM FOR ACTIVATION, DEACTIVATION AND MODIFICATION OF INTERCONNECT LINKS

Date: _____ Application Reference Number: _____

To: Manager, Network Integration and Interconnect Fax: 6848 4113

- Activation of New Interconnection Links
- Deactivation of Interconnection Links
- Modification of Interconnection Links

Requesting Licensee Name : _____

Requesting Licensee's BRN: _____

Name : _____

Designation : _____

Signature : _____

Telephone : _____

Facsimile : _____ Company Stamp : _____

Intended Ready For Service Date: _____

Interconnection Link Information (for more than 4 links, please complete a separate form)

<u>Line Ref No/STM sys & channels</u>	<u>CIC No*</u>	<u>SingTel POI</u>	<u>Requesting Licensee Switch</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Call Type and Access Code (where applicable): _____

Network configuration Diagram (where applicable) Please attach to this form.

Information for Modification of Interconnection Links:

* CIC no. is not applicable for activation of new interconnection links

<input type="checkbox"/> Application returned - incomplete/illegible	
<input type="checkbox"/> Not Approved	Reason for Rejection : _____
<input type="checkbox"/> Approved	SingTel Approval Code : _____
	Ready For Service Date : _____
Sign : _____ Contact Number : _____	
Name : _____ Fax Number : _____	
Processed Date : _____	

SCHEDULE 1B

VIRTUAL (DISTANT) INTERCONNECTION FOR SBOs

SCHEDULE 1B

VIRTUAL (DISTANT) INTERCONNECTION FOR SBOS

1. GENERAL

- 1.1 Each Party agrees to interconnect and keep interconnected their respective Networks subject to and in accordance with the terms and conditions of this Schedule 1B.
- 1.2 This Schedule 1B only applies to a Requesting Licensee which is an SBO.
- 1.3 For the avoidance doubt and unless the Parties agree otherwise, where both Parties have established Interconnection of their respective Networks prior to the RIO Review Date:
- (a) the existing interconnect configuration that applies between each Party's respective Network at the RIO Review Date will continue to apply; and
 - (b) the Parties need not change the Interconnection configuration of their respective Networks as may be required under this Schedule 1B.

SingTel Comment: Clause 1.3

Clarifying amendment only. SingTel has introduced clause 1.3 to ensure that Requesting Licensees that have already interconnected their Network with the SingTel Network at the RIO Review Date are not subject to any adverse impact at the time the amendments to this Schedule take effect.

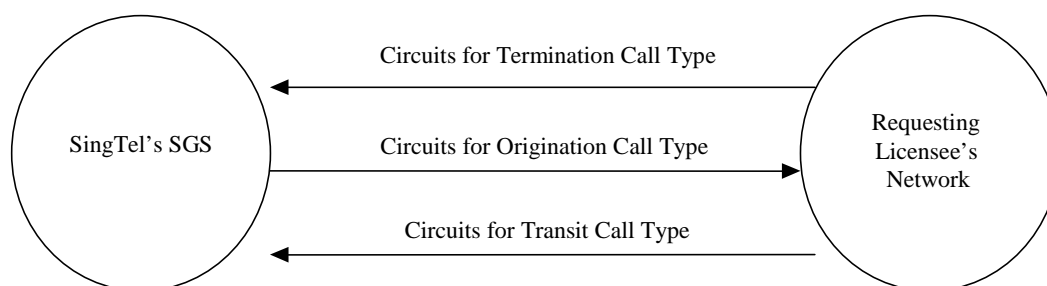
2. INTERCONNECT CONFIGURATION

- 2.1 The Requesting Licensee must interconnect its Network with the SingTel Network at SingTel's SBO Gateway Switches (**SGS**) as specified in Section 2F of Annex A.
- 2.2 The Requesting Licensee must manage and maintain the Interconnection Links, taking into account the need for growth, diversity and security in traffic routes and signalling links.

SingTel Comment: Clause 2.2

Consequential amendment only. SingTel has amended clause 2.2 to ensure consistency with Schedule 1A.

- 2.3** The Minimum Interconnection Capacity for Interconnection by the Requesting Licensee to one (1) SingTel SGS is two (2) 2Mbps E1 links. The Minimum Interconnection Capacity for Interconnection by the Requesting Licensee to two (2) of SingTel SGS is four (4) 2Mbps E1 links.
- 2.4** If the Requesting Licensee interconnects to SingTel’s Network with Interconnection Capacity less than the Minimum Interconnection Capacity, the Requesting Licensee acknowledges that the Network performance may not be equivalent to other Licensees which have fulfilled the Minimum Interconnection Capacity for Interconnection at each of SingTel’s SGSs. SingTel shall not be liable for any degradation in Call handling and/or Network performance experienced by a Requesting Licensee who does not fulfil the Minimum Interconnection Capacity.
- 2.5** An Interconnection Link may comprise different types of circuit groups. The circuits in each circuit group will convey traffic in a specific direction (one-way) as shown below. The Requesting Licensee must designate the Interconnection Link for each type of circuit group. SingTel shall assign the Circuit Identification Code (**CIC**).



Circuit Groups

- 2.6** The Requesting Licensee is responsible for the correct dimensioning of the type of circuit groups (one-way) that it will require.
- 2.7** If SingTel or the Requesting Licensee wishes to interconnect at additional POIs, that Party may request an additional POI and the Party will negotiate in good faith in relation to the interconnect configuration applicable to such additional Interconnection. The Party that wishes to interconnect at additional POIs is liable for any costs in relation to any such additional POIs.

SingTel Comments: Clause 2.7

The Requesting Licensee should be liable for the costs associated with the provision of additional POIs. A request for an additional POI results in SingTel incurring costs that would not otherwise be payable if the Requesting Licensee requested interconnection in accordance with clause 2.1.

2.8 Neither Party shall be required to commence works on the installation of Network Facilities to support a new POI under clause 2.7 until the Party has agreed on the interconnect configuration under clause 2.7.

3. POINT OF INTERCONNECTION

3.1 The Parties agree that the POI will be located on the Requesting Licensee's side of the SingTel SGS Digital Distribution Frame (DDF) at the SingTel SGS.

3.2 Each Party is responsible for the provisioning and maintenance of Network Facilities on its "side" of the POI.

3.3 The Interconnection between SingTel's SGS and the Requesting Licensee's Network located at a different site will be implemented by means of 2Mbps E1 Interconnection Link.

3.4 The Requesting Licensee will be responsible for the connection of the Interconnection Link between the POI and the Requesting Licensee's Network.

3.5 The Requesting Licensee shall acquire its own Local Leased Circuits at 2Mbps (E1) G.703 interface to form part of the Interconnection Link from SingTel or another Licensee. The Requesting Licensee's Interconnection Link must consist of multiple 2Mbps (E1) circuits terminated at a DDF in SingTel's designated SGS exchanges.

SingTel Comment: Clause 3.5

SingTel has amended clause 3.5 to permit Requesting Licensees to acquire Local Leased Circuits from either SingTel or another Licensee.

3.6 At the Requesting Licensee's request, SingTel may lease Local Leased Circuits at 2Mbps (E1) G.703 interface to the Requesting Licensee's Network based on SingTel's standard terms and conditions for supply of Local Leased Circuit service.

3.7 The Requesting Licensee may request modification of an Interconnection Link by completing the request form set out in Annex 1B.1. SingTel will consider the request

for modification and if SingTel agrees to such a modification, SingTel will undertake the modification in accordance with that request. The Requesting Licensee will be liable for any costs incurred by SingTel in performing the modification of the Interconnection Link.

4. TECHNICAL REQUIREMENTS AND SPECIFICATIONS

4.1 Transmission

4.1.1 The Parties shall interface at 2Mbps level and comply with ITU-T Rec G.703.

4.2 Signalling

4.2.1 The Parties shall comply with CCS SS7 – MTP and ISUP as specified in Section 1 of Annex A.

4.2.2 The Requesting Licensee shall obtain its own Signalling Point Code from the Authority.

4.2.3 Both Parties shall provide CCS SS7 Signalling Link(s) up to a maximum of two (2) SS7 Signalling Links for Interconnection to one (1) SGS (or POI) or a maximum of four (4) SS7 Signalling Links for Interconnection to two (2) SGSs.

4.2.4 The Parties shall adhere to additional SS7 signalling requirement as follows:

- (a) The Calling Party Number and Redirecting Number if available shall be conveyed for all Calls across the Network connection without manipulation.
- (b) The Dummy CLI received from Mobile Operators from inbound and outbound roamers shall be an eight (8) digit Dummy CLI.
- (c) The number dialled by the calling subscriber shall not be changed or amended for the routing of international outgoing Calls from one Party's Network to the other Party's Network. In addition, the NOA of the Called Party Number shall be set to 'International'.
- (d) Each Party's Network shall deliver international incoming Calls to the terminating Party's domestic Network with the international Call indicator 'A' bit of FCI parameter of the IAM set to '1'.

4.3 Interconnect Testing

4.3.1 The Parties shall comply with the testing procedures in Section 1A of Annex A.

4.4 Routing

4.4.1 The Parties shall route Interconnected Calls in accordance with the agreed arrangements applicable to that Call Type under Schedule 2.

5. DECOMMISSIONING

5.1 Subject to clauses 5.2 and 5.3, a Party (**Decommissioning Party**) may, for whatever reason, upon giving no less than six (6) months prior written notice to the other Party, close, replace or relocate any SGS in respect of which an Interconnection Link is connected, decommission an Interconnection Link or close a POI (**Decommissioning**).

5.2 (a) Subject to paragraph (b), the Decommissioning Party shall be responsible for and bear all direct costs incurred by both Parties in carrying out the Decommissioning. Direct costs are limited to removal of equipment and cabling at the POI.

(b) When the request for Decommissioning is at the direction of a Third Party pursuant to a legal obligation binding on the Decommissioning Party, each Party shall bear its own costs associated with the Decommissioning together with the direct costs incurred by that Party in respect of the establishment of alternative arrangements necessary to support the provision of Call Origination, Call Transit and Call Termination Services provided at the time of the Decommissioning.

5.3 If Decommissioning is to occur where Virtual (Distant) Interconnection has been established:

(a) the Requesting Licensee must comply with the terms and conditions under which Local Leased Circuits are supplied to the Requesting Licensee (including the payment of any early termination payments); and

(b) the Requesting Licensee will arrange for the connection of Local Leased Circuits to the alternative or relocated SGS or POI prior to the Decommissioning.

SingTel Comments: Clause 5.3

Given that the Requesting Licensee can now acquire Local Leased Circuits from other parties for interconnection purposes, SingTel cannot arrange for the Local Circuits to be re-located. This will be the Requesting Licensee's responsibility.

- 5.4 Upon the happening of an event which causes or is likely to cause significant damage to the Network of a Party or which endangers or is likely to endanger the health or safety of any person (**Emergency Event**), that Party may close or replace its SGS or a POI or Decommission an Interconnection Link without prior written notice to the other Party, provided that it notifies the other Party as soon as practicable that the Emergency Event exists and that emergency relocation work is being or will be performed. The costs incurred as a result of, or in connection with, a closure or replacement of an SGS or a POI or Decommissioning of an Interconnection Link under this sub-clause shall be borne as follows:
- (a) where the occurrence of the Emergency Event was caused as a result of the negligence or wilful act or omission of the first-mentioned Party, its employees, agents or contractors, that Party shall bear the costs associated with the closure, replacement or Decommissioning incurred by both Parties; and
 - (b) where the occurrence of the Emergency Event was not caused as a result of the negligence or wilful act or omission of the first-mentioned Party, its employees, agents or contractors, each Party shall bear its own costs associated with the closure, replacement or Decommissioning.

ANNEX 1B.1 – REQUEST FORM FOR ACTIVATION, DEACTIVATION AND MODIFICATION OF INTERCONNECT LINKS

Date: _____ Application Reference Number: _____

To: Manager, Network Integration and Interconnect Fax: 6848 4113

- Activation of New Interconnection Links
- Deactivation of Interconnection Links
- Modification of Interconnection Links

Requesting Licensee Name : _____

Requesting Licensee's BRN: _____

Name : _____

Designation : _____

Signature : _____

Telephone : _____

Facsimile : _____ Company Stamp : _____

Intended Ready For Service Date: _____

Interconnection Link Information (for more than 4 links, please complete a separate form)

<u>Line Ref No</u>	<u>CIC No*</u>	<u>SingTel POI</u>	<u>Requesting Licensee Switch</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Call Type and Access Code (where applicable): _____

Network configuration Diagram (where applicable) Please attach to this form.

Information for Modification of Interconnection Links:

* CIC no. is not applicable for activation of new interconnection links

<input type="checkbox"/> Application returned - incomplete/illegible	
<input type="checkbox"/> Not Approved	Reason for Rejection : _____
<input type="checkbox"/> Approved	SingTel Approval Code : _____
	Ready For Service Date : _____
Sign : _____	Contact Number : _____
Name : _____	Fax Number : _____
Processed Date : _____	