

APPENDIX 4

DIRECTED MODIFICATIONS TO SCHEDULE 2B

SUBJECT TO CHANGE

SCHEDULE 2B
CALL TERMINATION SERVICE

NOTE: UNLESS OTHERWISE SPECIFIED BY IMDA, IMDA CONDITIONALLY APPROVES THE PROPOSED CHANGES BY SINGTEL IN THIS DOCUMENT.

SCHEDULE 2B

CALL TERMINATION SERVICE

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SCHEDULE 2B

CALL TERMINATION SERVICE

1. GENERAL

- 1.1** The Supplier will supply the Call Termination Service to the Supplier's Network in accordance with clause 11.1 of the main body of the RIO Agreement in respect of the Call Types for which the process in clause 2 has been followed and, in the case where SingTel is the Acquirer, in respect of the Call Types specified in Annex 2B-4 (**Terminating Interconnected VoIP Calls**).
- 1.2** For the avoidance of doubt, the process in clause 2 must be initiated by the Acquirer if it wishes to acquire the Call Termination Service in respect of Calls from Acquirer the origin of which has not been previously covered by a request under clause 2 or, in the case where SingTel is the Acquirer, in respect of the Call Types not specified in Annex 2B-4.
- 1.3** Notwithstanding the Interconnection of the SingTel Network and the Requesting Licensee's Network, the Supplier shall have no obligation to provide the Call Termination Service in respect of Calls of any type other than Terminating Interconnected VoIP Calls.
- 1.4** The Supplier will only be required to provide the Call Termination Service to the Acquirer to the extent that the Acquirer has complied with Schedule 1 and this Schedule 2B.
- 1.5** The Acquirer shall provide and maintain the Interconnection Links for the conveyance of Terminating Interconnected VoIP Calls. In the event that the Acquirer no longer provides and maintains Interconnection Links for the conveyance of Terminating Interconnected VoIP Calls, the Supplier shall cease to supply the Call Termination Service for all Call Type(s) implemented pursuant to this Schedule. The Acquirer shall be liable for the costs incurred by the Supplier for the cessation in accordance with the Charges as specified in Schedule 9 for ceasing the supply of the Call Termination Service.

2. CALL TYPES

- 2.1** This clause 2 applies where the Acquirer wishes to extend the use of the Call Termination Service provided by the Supplier to a Call Type in respect of which

the process in this clause 2 has not already been undertaken or, in the case where SingTel is the Acquirer, has not been specified in Annex 2B-4.

- 2.2** The Acquirer shall notify the Supplier by means of the request form set out in Annex 2B-1 of its request to extend the use of the Call Termination Service to a particular Call Type.
- 2.3** Following receipt of a request form under clause 2.2, the Supplier shall assess that request and notify the Acquirer within five (5) Business Days that either:
- (a) the implementation of the request in respect of the requested Call Type involves only Network Conditioning in the Supplier's Network, in which case the Negotiation Period shall be fifteen (15) Business Days; or
 - (b) the implementation of the request in respect of the requested Call Type involves work in addition to or as an alternative to Network Conditioning in the Supplier's Network, in which case the Negotiation Period shall be sixty (60) Business Days.
- 2.4** The Parties shall negotiate in good faith the requirements, implementation Charges and timetable for extending the use of the Call Termination Service provided by the Supplier to the requested Call Type for the Negotiation Period notified in clause 2.3, failing which either Party may commence the Dispute Resolution Procedure in accordance with Schedule 11.
- 2.5** Where the Parties have reached an agreement in accordance with clause 2.4 above, the Supplier will commence implementation in accordance with the agreed timetable.
- 2.6** The Acquirer shall be liable for the costs incurred by the Supplier in processing and implementing the Acquirer's request to extend the use of the Call Termination Service to a particular Call Type in accordance with the applicable Charges set out under Schedule 9.
- 2.7** If the Supplier reasonably believes that, in performing the Acquirer's request in accordance with clause 2.6, any work, operation or use by the Acquirer in relation to the extension of use of the Call Termination Service will cause the Supplier to incur additional costs beyond those costs incurred in the normal provisioning of the Call Termination Service (**Additional Costs**), the Supplier shall notify the Acquirer of the Additional Costs, consisting of reasonable costs associated with the Supplier's:

- (i) additional processing and implementation of the Acquirer's request;
 - (ii) extension of the use of the Call Termination Service to a particular Call Type and termination of the Call Termination Service in respect of a Call Type;
 - (iii) additional project study costs;
 - (iv) additional labour costs;
 - (v) additional equipment and software (including information system and software modification) costs; and
 - (vi) additional software and hardware testing costs.
- 2.8** The Supplier's notification under clause 2.7 shall only be valid for a period of five (5) Business Days from the date of receipt by the Acquirer.
- 2.9** Within five (5) Business Days of receipt of the notification under clause 2.7, the Acquirer shall provide its agreement to proceed with the Acquirer's request and pay the Additional Costs to be incurred by the Supplier in implementing the Acquirer's request to extend the use of the Call Termination Service to a particular Call Type. If the Acquirer does not respond within this period or informs the Supplier that it is unwilling to incur the Additional Costs or informs the Supplier of its intention to withdraw the request, the Supplier shall not be obliged to proceed with the implementation of the Acquirer's request nor to incur any of the Additional Costs set out in clause 2.7 and the Acquirer's request to extend the use of the Call Termination Service to a particular Call Type will be deemed to be withdrawn. The Acquirer shall be liable for any Additional Costs that the Supplier has incurred in connection with implementing the Acquirer's request until the date of withdrawal of the request. Any dispute in respect of determining the Additional Costs set out in the Supplier's notice shall be resolved in accordance with Schedule 11 of the RIO Agreement and the Acquirer's request shall be considered suspended until resolved.
- 2.10** Nothing in this clause 2 requires the Supplier to perform any changes in its Network or to commence the supply of Call Termination Services for a Call Type until the Parties have completed the Change Process for that Call Type and all Network Conditioning Charges have been agreed to by the Acquirer.

- 2.11 The Acquirer may, at any time, request the Supplier cease to supply the Call Termination Service in respect of a Call Type, in which case the Supplier shall cease to supply the Call Termination Service in respect of that Call Type as soon as reasonably practicable or at such later time as specified by the Acquirer. The Acquirer shall pay the Supplier the Charges as specified in Schedule 9 for ceasing the supply of the Call Termination Service in respect of that Call Type.

3. NUMBER LEVEL ACTIVATION

- 3.1 Each Party shall provide the other Party with at least two (2) weeks' notice prior to any request to open new Number Levels.
- 3.2 The process for the opening of Number Levels shall be in accordance with the flowchart shown in Annex 2B-5.

4. CHARGING PRINCIPLES

- 4.1 For any Terminating Interconnected VoIP Calls terminating into the Supplier's Network, the Supplier will collect the Termination Charge from the Acquirer. For the avoidance of doubt, the Call Termination Service is not provided for termination of Calls to Third Party Networks.
- 4.2 Each Party shall, for those Terminating Interconnected VoIP Calls for which it is providing (as the case may be) or receiving a Call Termination Service, collect a Call record for each individual Terminating Interconnected VoIP Call on a CDR basis and process such records in accordance with clause 5.
- 4.3 The Call records collected by the Supplier in accordance with this clause 4 shall be the source of the data used by the Supplier to invoice for the Call Termination Service it provides under this RIO Agreement.
- 4.4 The calculation of Charges for the Call Termination Service will be based on the number of Call Durations recorded on the basis of the applicable Billing Unit, and in accordance with the applicable rates set out in Schedule 9.

CLAUSE 4.5 – MODIFICATION REQUIRED

- 4.5 Calls shall be charged for the duration of use of the Data Link for the Call. Duration of use of a Data Link shall start at the time the Data Link first transmits any data related to the Call and shall end at the time the Data Link ceases entirely to transmit any data related to the same Call. All Calls, regardless of whether they are

successful or unsuccessful, are chargeable. The Charges shall be accounted in per second blocks.

***IMDA Directed Modifications:** One respondent to the public consultation enquired how to define the start and end time of the Data Link utilisation related to a Call. For clarity, IMDA directs Singtel to propose modifications to clause 4.5 herein to specify the Session Initiation Protocol (“SIP”) request methods which would signal the start and end time of a Call, as well as to make reference to Call Duration as defined under Schedule 12 Dictionary.*

4.6 The Parties shall agree that if a Chargeable Call Duration extends over two (2) or more Charge rate periods, the Call shall be recorded as a single Call in the Charge rate period which applies at the commencement of the Call and the Chargeable Call Duration will be determined by adopting the applicable rate set out in Schedule 9 for the applicable charging period in which the Call is answered.

4.7 The Parties shall agree that for Calls that cross over to the next Billing Period, the Calls shall be billed in the Billing Period in which those Calls end.

5. GENERAL BILLING VERIFICATION INFORMATION

5.1 The Supplier shall use its reasonable endeavours to provide Billing Verification Information for the Call Termination Service in accordance with the format set out in Annex 2B-2 within fourteen (14) Calendar Days from the end of each Billing Period, together with the invoice for the Call Termination Service to be issued in accordance with Schedule 9.

5.2 In addition to the obligation in clause 5.1, when there is a dispute in relation to invoices issued for the Call Termination Service, the Parties shall exchange the Detailed Billing Verification Information set out in Annex 2B-3.

5.3 In the event that the Supplier cannot record Billing Verification Information for the Call Termination Service due to a system error or other fault, upon the request of the Supplier, the Acquirer shall provide Billing Verification Information to the Supplier.

5.4 Where the Billing Verification Information collected by the Acquirer is not available under clause 5.3, the Parties shall negotiate in good faith such alternative Billing arrangements, such as an estimation based on the previous three (3) months' Billing Verification Information, that are appropriate in the circumstances.

ANNEX 2B.1: REQUEST FORM FOR INTRODUCING NEW CALL TYPE (CALL TERMINATION SERVICE)

1. GENERAL

1.1 Call Type Name and Description

The Acquirer is to provide a general description of Call Type.

1.2 Date to be Introduced (Proposal)

The Acquirer is to indicate the preferred implementation date for access to be available.

2. CALL ORIGINS

The Acquirer is to indicate which Call origins (eg types of Calling subscribers) from its Network the Call Type is required from and which origins from its Network the Call Type is not required from (e.g. Acquirer international incoming Calls, Acquirer operator Calls; Acquirer PSTN/ISDN Calls).

3. NETWORK CONFIGURATION

3.1 Network Configuration/Routing Information

The Acquirer is to indicate the Network configuration (with a diagram) through which the Call Type is to be conveyed.

3.2 Trunk Group (SIP Trunk Configuration)

The Acquirer is to indicate how traffic to the Call Type will be routed, as well as which Trunk Groups are to be used at the IGSs and SGSs.

3.3 Other Engineering Requirements

The Requesting Party shall segregate local originated Calls and international originated Calls into separate Trunk Groups or separate Interconnection Links for the purpose of call termination to the other Party's Network.

4. PROTOCOL HANDSHAKING

Regardless of the Call Type, the Acquirer shall comply with the Internet Engineering Task Force SIP standards.

5. TESTING

The Acquirer is to specify the testing requirements, such as testing configuration, test numbers, etc. The preferred testing timeframe is also to be indicated.

6. BILLING AND CHARGING REQUIREMENT

6.1 Customer Billing

The Acquirer is to specify which Party is to bill the customer and how settlement is to occur.

6.2 Operator Billing

The Acquirer is to indicate how inter-operator Billing and settlement is to occur.

7. BILLING INTEGRATION

Both Parties are to look at the downstream billing requirements to cater for the settlement between the Parties. Both Parties have to ensure that the agreed arrangements for Customer and operator Billing and settlement can be implemented and establish timetables for their implementation.

8. OTHER REQUIREMENTS

The Acquirer may specify any other requirements for Call Type to be delivered.

ANNEX 2B.2: BILLING VERIFICATION INFORMATION FOR CALL TERMINATION SERVICE**BILLING INFORMATION FOR THE SUPPLIER**

Call Description	Time Zone	Call Duration (in secs)	Call Charges (in S\$)
Originating from the Acquirer's Network terminating to the Supplier's Network (Termination Charge)	Peak	xxxx	\$xxx.xx
	Off Peak	xxxx	\$xxx.xx
Total		xxxx	\$xxx.xx

ANNEX 2B.3: DETAILED BILLING VERIFICATION INFORMATION

1. Billing Verification for Supplier IGS

				Originating From Acquirer's Network	
				(Terminating to the Supplier's Network)	
				Termination Charge payable by the Acquirer	
S/N	ExchID	System	Time Zone	Attempts	Duration (in secs)
1	IGS1	FBO001	Peak	xxx	xxxx
			Off Peak	xxx	xxxx
2	IGS1	FBO002	Peak	xxx	xxxx
			Off Peak	xxx	xxxx
3	IGS2	FBO001	Peak	xxx	xxxx
			Off Peak	xxx	xxxx
4	IGS2	FBO002	Peak	xxx	xxxx
			Off Peak	xxx	xxxx

2. Billing Verification for Supplier SGS

				Originating From the Acquirer's Network	
				(Terminating to the Supplier's Network)	
				Termination Charge payable by the Acquirer	
S/N	ExchID	System	Time Zone	Attempts	Duration (in secs)
1	SGS1	SBO001	Peak	xxx	xxxx
			Off Peak	xxx	xxxx
2	SGS1	SBO002	Peak	xxx	xxxx
			Off Peak	xxx	xxxx
3	SGS2	SBO001	Peak	xxx	xxxx
			Off Peak	xxx	xxxx
4	SGS2	SBO002	Peak	xxx	xxxx
			Off Peak	xxx	xxxx

ANNEX 2B.4: LIST OF CALL TYPES FOR CALL TERMINATION SERVICE

SingTel International Incoming Call Service
SingTel Local Call Termination Service
SingTel Voice Mail “1383” Service
SingTel Enhanced System “1305” Service
SingTel Police Enquiries “1600” Service
SingTel Non-emergency Ambulance “1777” Service
SingTel Enhanced Call Routing “1822” Service
SingTel Single Number Service “7000” Service

ANNEX 2B.5: PROCEDURE FOR NUMBER LEVEL ACTIVATION

