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29 December 2005

Mr. Andrew J. Haire
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Infocomm Development Authority of Singapore
8 Temasek Boulevard
#14-00 Suntec Tower Three
Singapore 038988

Re: Consultation on proposed amendments to Singapore Telecommunications Limited's Reference Interconnection Offer – Provision of Tail Local Leased Circuits as an Interconnection Related Service

Dear Mr. Haire:

On behalf of the Asia Pacific Carriers' Coalition, we submit our comments to the consultation on proposed amendments to Singapore Telecommunications Limited's Reference Interconnection Offer – Provision of Tail Local Leased Circuits as an Interconnection Related Service.

Please do not hesitate to let us know should you have any queries on the submission.

Yours sincerely,



Chong Chin Hui
APCC - Secretariat

**CONSULTATION ON PROPOSED AMENDMENTS TO
SINGAPORE TELECOMMUNICATIONS LIMITED'S
REFERENCE INTERCONNECTION OFFER –
PROVISION OF TAIL LOCAL LEASED CIRCUITS AS AN
INTERCONNECTION RELATED SERVICE**

29 DECEMBER 2005

**JOINT SUBMISSION OF MEMBERS OF
THE ASIA PACIFIC CARRIERS'
COALITION**

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STATEMENT OF INTEREST

We appreciate the opportunity given by the Infocomm Development Authority (“IDA”) to comment on the proposed amendments to Singapore Telecommunications Limited’s (“SingTel”) Reference Interconnection Offer (“RIO”) in respect of the provision of tail local leased circuits (“TLLCs”) as an interconnection related service.

All APCC members¹ involved in preparing this joint submission (the “Submission”) are carriers or facilities-based operators (“FBOs”) currently purchasing services, such as local leased circuits, co-location and interconnection services from SingTel and are likely to continue to do so pursuant to the terms of SingTel’s RIO (which sets out the IDA-approved prices and standard terms and conditions for interconnection and access to SingTel’s network). The terms of the RIO are therefore of critical importance to each of these carriers and FBOs.

¹ This submission has been approved by the majority of APCC members.

INTRODUCTION

We welcome IDA's request for views and comments on SingTel's RIO in respect of the provision of TLLCs as an interconnection related service. As mentioned, the RIO is of critical importance to us, as it deals with essential services we require in order to conduct our business. Nevertheless, we note that the two (2) week time frame in which to provide comments is too short, given the importance of its contents and the complexity of the issues involved. Accordingly, please note that this Submission contains key concerns only, and is not exhaustive. Any omission of comment with respect to any particular section does not mean that such section is necessarily endorsed by us.

COMMENTS

From an operational perspective, SingTel's RIO under the proposed Schedule 4C in respect of the provision of TLLCs as an interconnection related service is impractical due to the following factors: -

- a) E1 caps on multiplexing capacities; and
- b) the requirement of a 30 Calendar Day order and provisioning lead time for Tie Cables.

APCC also notes that the proposed RIO appears to be contrary to SingTel's primary obligation to behave in a non-discriminatory manner. As it stands presently, SingTel's proposed RIO does not appear to satisfy Section 6.3.3.1 of the Telecom Competition Code 2005 (the "Code").²

Capitalised terms not otherwise defined herein have the meanings given to such terms in SingTel's RIO.

² Section 6.3.3.1 of the Code provides that a Dominant Licensee must offer to provide all Interconnection Related Services and Mandated Wholesale Services to Requesting Licensees on prices, terms and conditions that are no less favourable than the prices, terms and conditions on which it provides comparable services to itself, its affiliates or other Customers.

A. E1 Caps on Multiplexing Capacities

SingTel intends to utilise Tie Cables as a connector to physically link the Requesting Licensees' telecommunications networks to SingTel's own equipment in connection with the provision of the TLLCs as an interconnection related service. Whilst the APCC recognises and accepts use of Tie Cables as an industry norm for the purposes of linking telecommunication networks of competitive carriers with that of the incumbent operator, capping Tie Cables at E1 capacities when used in conjunction with Multiplexing Options is not justified. High-speed multiplexing options are technically feasible and have been deployed successfully in other jurisdictions. For comparative purposes, in the U.K., the PPC Offer allows multiplexed capacities of up to STM-16 delivered over a Tie Cable pair. Similarly, high-speeds multiplexing options are also available under the US Special Access Service.

APCC is of the view that SingTel's imposition of multiplexing caps at E1 capacities is not in line with international standards and places an unnecessary network and cost burden on Requesting Licensees. The proposed E1 cap results in additional cost to the interconnecting carriers as they are required to utilise more Tie Cable pairs than should be necessary. The inefficiency may be demonstrated as follows:

- Under an optimal network setup involving high speeds multiplexing, the aggregation of multiple low speed TLLCs for efficient delivery to the interconnecting carrier is possible. A high speed multiplexing option of STM-1 capacity allows for the maximum carriage of 2,480 "64-kbps TLLCs" over a single Tie Cable Pair. That same Tie Cable Pair could also provide carriage to 155 "1-Mbps TLLCs".
- The current proposal of SingTel to physically cap the Tie Cable Pair to provide carriage at E1 multiplexed capacities means that a single Tie-Cable Pair can only support 32 "64-kbps TLLCs" or 2 "1-Mbps TLLCs".

A table providing the number of TLLCs that may be supportable at various multiplexing capacities is set out below:-

Table 1: No of Tail Local Leased Circuits supportable by various Multiplexing Options (STM-16, STM-4, STM-1 and E1)

	STM-16	STM-4	STM-1	E1
64kbps	39,680	9,920	2,480	32
128kbps	19,840	4,960	1,240	16
512kbps	4,960	1,240	310	4
768kbps	3,307	827	207	3
1024kbps	2,480	620	155	2
1536kbps	1,653	413	103	1
1984kbps	1,280	320	80	1

As evidenced from the table above, high-speed multiplexing raises the network efficiency for the interconnecting carriers, allowing for optimal use of the Tie Cables at the point of interconnection by reducing the number of Tie Cables necessary to support the system.

Since high-speed multiplexing is presently available on a commercial basis, APCC submits that its inclusion in SingTel's RIO is only consistent with SingTel's non-discriminatory obligations under the Code. This inclusion would also put Singapore in alignment with other jurisdictions. As such, APCC is of the view that it is unjustifiable to competitive carriers and FBOs in Singapore to be denied such high-speed multiplexing options under SingTel's RIO.

B. Provisioning Timescales for Tie Cables

As explained above, the Tie-Cables are critical to facilitate interconnection. Requesting Licensees must ensure their availability in sufficient quantities prior to any TLLC orders. Failure to do so would necessarily lead to rejected orders and the imposition of financial penalties as provided under SingTel's RIO.

The Tie Cables are available for purchase during the Co-Location Project Study phase. After this period, the Requesting Licensee is required to provide a 30 Calendar Day lead time to SingTel if additional Tie Cables are required. From a provisioning perspective, this proposed 30 Calendar Day lead time is an unduly burdensome and

inefficient requirement and represents a regression from the current procedure. APCC is of the view that the proposed 30 Calendar Day lead time should be reduced.

Under the current proposal, a Requesting Licensee is faced with making a commercial decision between (i) pre-ordering hundreds of Tie Cables at each SingTel Local Exchange in order to meet possible customer demand and bearing unnecessary storage and maintenance costs for any excess Tie Cables or (ii) taking the risk of losing customers because of the possible unavailability of Tie Cables for a 30 Calendar Day period.

As an example, an interconnecting carrier forecasting 400 new activations in the next quarter at a SingTel Local Exchange would be confronted with the decision of either turning up 13 Tie Cable pairs (if all 400 circuits are of 64kbps) or 400 Tie Cable pairs (if the new circuits are of 1.5 or 2mbps). The carrier will be uncertain whether to order 13 or 400 Tie Cable pairs. However, if multiplexing is available at STM-1 capacities, the carrier no longer needs to turn up 400 Tie Cable pairs in anticipation of the future demand. Only 5 pairs will be required.

Clearly, in an optimal network environment where high speeds multiplexing is made available, an interconnecting carrier would not be required to order hundreds of extra Tie Cable pairs at the Local Exchange in anticipation of future demand, as each Tie Cable pair would be capable of supporting hundreds if not thousands of customers, thereby reducing excessive and unnecessary financial commitments to purchase, store and maintain Tie-Cables.

Each of the carriers participating in this Submission would be happy to discuss these comments in more detail with IDA, at IDA's convenience. Please do let us know when would be a convenient time for this discussion.