



## BANGLADESH SUBMARINE CABLE COMPANY LIMITED (BSCCL)

### BIDDING DOCUMENT

Name of the Service: Invitation of Bid for taking lease of International Internet Bandwidth from Singapore for Operation of BSCCL's IP Transit Service.

Tender No:

Date: -----

Issued To:

Date of Issue:

Bangladesh Submarine Cable Company Limited (BSCCL), Rahmans' Regnum Center (7<sup>th</sup> Floor), 191, Tejgaon-Gulshan Link Road, Dhaka-1208.



## 1. INVITATION FOR BID PROPOSAL AND INSTRUCTIONS TO THE TENDERER

- 1.1 Bangladesh Submarine Cable Company Limited (BSCCL) is an International Long-Distance Communications (ILDC) and International Internet Gateway (IIG) operator in Bangladesh and is providing IPLC & IP Transit services through the Submarine Cable network. BSCCL is a member of SEA-ME-WE-4 and SEA-ME-WE-5 Submarine Cable Consortiums. In order to facilitate IP Transit services to its clients, BSCCL intends to take lease of International Internet Bandwidth from BSCCL's Singapore PoP. Hence, BSCCL is floating this bid in order to take lease IP transit services from Singapore. Lease of the such IP transit services will be for an **initial period of two years**.
- 1.2 BSCCL will consider multiple upstream providers in Singapore to ensure redundancy and better routing.
- 1.3 Detailed scope of service has been given in the subsequent clauses of this document.
- 1.4 The Tenderer has to submit two separate bids for Lot-01 and Lot-02. The tenderers are requested to follow the process for submission of the bid proposal mentioned in **clause 6**.

## 2. Method of Procurement: International Tender

## 3. Source of Fund: Company's Own Fund

## 4. ELIGIBILITY REQUIREMENTS OF THE TENDERERS

- 4.1 The tenderer offering the IP transit service shall have the authority to sell the IP Bandwidth internationally where the offered IP node is located (Singapore). The tenderer has to submit a declaration with the bid. (as per "**Annexure-A**" attached in Annexure, duly filled up and properly signed by the tenderer or a copy of Approval/permission to do business in Singapore).
- 4.2 The tenderer shall be within serial number 1-25 of CAIDA AS ranking list (<https://asrank.caida.org/>) at the date of publishing of tender **OR** the existing IP transit service provider to BSCCL **OR** the tenderer had provided IP transit service to BSCCL for at least 1 year within last 5 years with a good performance record.
- 4.3 Tenderer shall have registered ASN (Autonomous System Number) and sell the IP Bandwidth from that ASN. **Any party without its own ASN will not be eligible to participate in this bid.**
- 4.4 Any company having IIG or ILDC license issued by Bangladesh Telecommunication Regulatory Commission (BTRC) will not be eligible to participate in this bid.
- 4.5 All tenderers except Israel are eligible to participate in this bid.
- 4.6 The tenderer must not be insolvent, not bankrupt, or not in the process of bankruptcy. The tenderer has to submit a declaration with the bid. (as per "**Annexure-B**" attached in Annexure, duly filled up and properly signed by the tenderer).

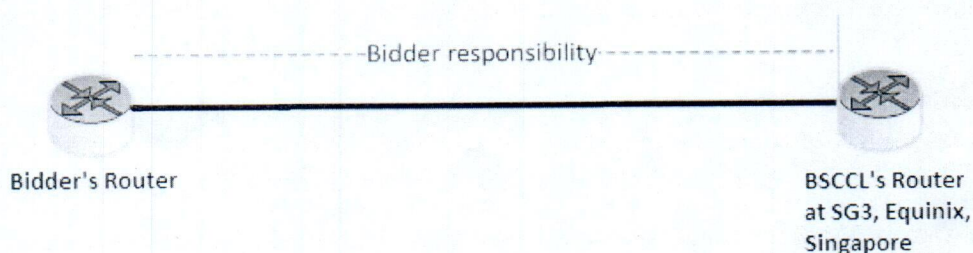




- 4.7 The tenderer has to submit a declaration with the bid that the tenderer has the legal capacity to enter into the contract with BSCCL (as per "Annexure-C" attached in Annexure, duly filled up and properly signed by the tenderer).
- 4.8 All potential tenderers as stated in clause 4.2 except RETN (Singapore) Pte. Ltd. who has already been selected for IP Transit service in our previous tender (dated – 14-March-2023) are eligible to participate in this tender.
- 4.9 If any tenderer fails to submit documents mentioned in **clause 4.1, clause 4.6 and clause 4.7** and fails to comply with other requirement of this clause (clause 4), the bid will be declared "Rejected" or "Not Acceptable".

## 5. SCOPE OF SERVICE REQUIREMENTS

- 5.1 The Tenderer shall deliver IP transit facility at BSCCL SG3 Data Center, Equinix, Singapore.
- 5.2 The tenderer will be responsible for the local backhaul (if required) and cross-connection to connect the tenderer's router ports to BSCCL's router ports at SG3, Equinix, Singapore.
- 5.3 BSCCL intends to take leases of IP transit service having capacity of **6x10G** circuits in two separate lots, as outlined in **Annexure-F (Lot-01)** and **Annexure-G (Lot-02)**. **3x10G** circuits are designated for **Lot-01** and **3x10G** circuits are designated for **Lot-02**.
- 5.4 Any tenderer can participate either Lot-01 or Lot-02 or both. If any tenderer participates for both the Lots, they have to submit separate bid for Lot-01 and Lot-02. If any tenderer submits both lots in single bid will be declared "Non-Responsive".
- 5.5 BSCCL intends to take leases of IP transit service having capacity of **6x10G** circuits in the manner described in **clause 16.5, 16.6 and 16.7**. The intended capacity may be increased or decreased.
- 5.6 BSCCL will activate any 10G circuit as necessary within two years from the date of contract signing with the selected tenderer. The service for each activated 10G port will be operational for a period of two years starting from the date of activation.
- 5.7 The diagram presented below illustrates the method of connection used to provide the IP bandwidth:





5.8 The tenderer needs to follow below tables format to quote for the services:

**Table-01: IP-Transit service in Singapore for Lot-01**

Data Center where BSCCL will take the service	NRC (if any)	MRC per Mbps for Committed (7.5 Gbps) Bandwidth		MRC per Mbps for Burstable (upto 2.5Gbps) Bandwidth		Total Price for 2 years for each 10G (as per formula)
		Year-1	Year-2	Year-1	Year-2	
Equinix SG3, Singapore						

Note: Formula is given in **Annexure-D** with an example.

- The tenderer should mention the “per Mbps” price in US\$.
- For evaluation purpose, prices quoted in **Annexure-D** will be considered for **Lot-01**. **TEC may calculate the price in their own way after getting clarification from the tenderer in case of deviation from “Annexure-D” submitted by the tenderer.**
- The tenderer needs to quote per 10G capacity.**
- The definition of committed bandwidth, Burstable bandwidth and 95th Percentile has been given in **Annexure-H**.

**Table-02: IP-Transit service in Singapore for Lot-02**

Data Center where BSCCL will take the service	NRC (if any)	MRC per Mbps for Committed (7.5 Gbps) Bandwidth		MRC per Mbps for Burstable (upto 2.5Gbps) Bandwidth		Total Price for 2 years for each 10G (as per formula)
		Year-1	Year-2	Year-1	Year-2	
Equinix SG3, Singapore						

Note: Formula is given in **Annexure-E** with an example.

- The tenderer should mention the “per Mbps” price in US\$.
- For evaluation purpose, prices quoted in **Annexure-E** will be considered for **Lot-02**. **TEC may calculate the price in their own way after getting clarification from the tenderer in case of deviation from “Annexure-E” submitted by the tenderer.**
- The tenderer needs to quote per 10G capacity.**
- The definition of committed bandwidth, Burstable bandwidth and 95th Percentile has been given in **Annexure-H**.

5.9 The offer shall include commissioning and testing of the ordered capacity on the Router IP port to provide IP transit service to the Internet backbones complying with applicable international standards.

## 6. SUBMISSION OF BID

- The Tenderer has to **submit two separate bids** for **Lot-01 and Lot-02**.
- The technical proposal and the financial proposal shall be submitted separately in two separate files mentioning the type of proposal (**Technical or Financial**). The hard copy of the



offer shall be submitted in person or should reach by postal mail to the following address within the date and time stipulated in the invitation notice:

Managing Director  
Bangladesh Submarine Cable Company Limited  
Rahmans' Regnum Center (7<sup>th</sup> Floor),  
191, Tejgaon-Gulshan Link Road,  
Dhaka-1208.

6.3 Submission of bid and password for the financial offer through email.

6.3.1 The tenderer may also submit their technical offer (without password) and financial **offer (password protected)** in PDF format through email to the following addresses;

a) [tender@bsccl.com](mailto:tender@bsccl.com)

b) And a copy (cc) to [bsccl.tender@gmail.com](mailto:bsccl.tender@gmail.com)

6.3.2 The password of the financial offer should be sent to [md@bsccl.com](mailto:md@bsccl.com).

6.3.3 The late bids will not be considered for evaluation and will be **rejected**.

## 7. VALIDITY OF BID

7.1 The price offer must remain valid for 120 (One hundred and twenty) days from the bid opening date.

7.2 The tenderer shall note that no bid security is required to participate in the bid.

## 8. CLARIFICATION OF BID

8.1 The evaluation committee of BSCCL may ask the tenderer for any clarification regarding their offer if needed.

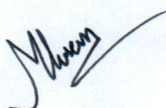
8.2 The request for clarification and the response of the tenderer may be through an official letter or via email. The tenderer must give their response to any query within the time mentioned in the query. If any tenderer fails to response within stipulated time, TEC may declare the bid as Non-Responsive.

## 9. CLARIFICATION AND AMENDMENT OF DOCUMENTS

9.1 Prospective Tenderer requiring any clarification on the bid document may notify such queries to [tender@bsccl.com](mailto:tender@bsccl.com) with a copy to [bsccl.tender@gmail.com](mailto:bsccl.tender@gmail.com).

9.2 At any time prior to the deadline for submission of the bid, BSCCL may, for any reason whether at its own initiative or in response to a clarification requested by a prospective Tenderer, amend/modify the bid document.

9.3 Any amendment of the bid document will be notified to all prospective Tenderer and will be published on BSCCL's website. Such amendment, if made, shall become an integral part of the bid document and will be binding on all prospective tenderer. BSCCL reserves the right to add/ delete/ modify any clause of the bid document.





- 9.4 In order to provide reasonable time to the prospective Tenderer to take the amendment into account in the preparation of their bids, BSCCL may at its own discretion, extend the deadline for the submission of the bid by any reasonable period.

## 10. TECHNICAL REQUIREMENTS FOR THE SERVICES

### 10.1 Service Availability, Round Trip Delay (RTD), & Packet Loss:

#### 10.1.1 Service Availability, RTD, & Packet Loss:

- 10.1.1.1 RTD shall be measured by computing the average RTD for one thousand (1000) pings of sixty-four (64) bytes each. The TEC will evaluate the latency from the tenderer's Looking Glass from Singapore and the commitment RTD for Lot-01 and Lot-02 shall be as below:

Table-03: RTD for Lot-01:

SL No.	Destination	From BSCCL Gateway Router located at SG3, Equinix, Singapore
1	USA (Trans-Pacific)	180~220 ms
2	Asia Pacific (Singapore)	1~5 ms
3	Asia Pacific (Japan)	90~110 ms
4	Asia Pacific (Hong Kong)	30~40 ms
5	Asia Pacific (China)	170~200 ms
6	Asia (India)	60~90 ms

Table-04: RTD for Lot-02:

SL No.	Destination	From BSCCL Gateway Router located at SG3, Equinix, Singapore
1	USA (Trans-Pacific)	180~220 ms
2	Asia Pacific (Singapore)	1~5 ms
3	Asia Pacific (Japan)	90~110 ms
4	Asia Pacific (Hong Kong)	30~40 ms
5	Asia Pacific (China)	170~200 ms
6	Asia (India)	60~90 ms
7	Asia Pacific (Malaysia)	10~15ms
8	Asia Pacific (Taiwan)	160~180ms
9	Asia Pacific (South Korea)	70~90 ms
10	Asia Pacific (Australia)	90~110ms
11	Asia Pacific (Indonesia)	10~20ms
12	Asia Pacific (Thailand)	25~40ms
13	Asia Pacific (Vietnam)	25~40ms
14	Asia Pacific (Phillipine)	25~40
15	Global (cloudflare)	1~3ms
16	Global (fastly)	1~3ms



10.1.1.2 The tenderer shall provide supporting documents (snapshot of ping and trace) measured from the tenderer' **Looking Glass** located in Singapore to the IPs mentioned in **Annexure-F** for **lot-01** and **Annexure-G** for **Lot-02**.

10.1.1.3 It is noted that the tenderer needs to meet the **RTD latency of at least 4 (four) destinations out of 6 (six) as mentioned in Annexure-F for Lot-01**. If any tenderer fails to meet the RTD latency requirement, the bid will be "**Non-Responsive**" for Lot-01 and will not be considered for further evaluation.

10.1.1.4 It is noted that the tenderer needs to meet the **RTD latency of at least 12 (twelve) destinations out of 16 (sixteen) as mentioned in Annexure-G for Lot-02**. If any tenderer fails to meet the RTD latency requirement, the bid will be "**Non-Responsive**" for Lot-02 and will not be considered for further evaluation.

10.1.1.5 The following information shall only be used for SLA purposes. It is neither to quote by the tenderer nor to use for evaluation purposes.

**Table-05: Regional RTD:**

SL No.	Location/Intra/Inter Region	RTD
1	Intra- Europe	40~50 ms
2	Intra- USA	60~70 ms
3	Intra- Asia	130~150 ms
4	USA (East Coast)-Europe (London)	100~150 ms
5	USA (West Coast)-Asia (Singapore)	220~240 ms

**10.1.2 Packet Loss:**

10.1.2.1 The average monthly packet loss to the Tenderer' last hop router in any destination shall be less than 1.0%, measured from the IP gateway router port of BSCCL Equinix PoP. Packet Loss shall be measured by computing the percent loss of one thousand (1000) pings of sixty-four (64) bytes each.

**10.1.3 Availability**


10.1.3.1 Services shall be provided at a guaranteed level (except for the planned maintenance). In the event that the service level falls below the guaranteed level due to International Backhaul, IP PoP, Transmission Equipment, Latency, etc. the following compensation shall be payable to BSCCL:

Cumulative Downtime (t) in any Calendar Month	Compensation equivalent to Prorated monthly rental charge
T<=30 minutes	Nil
30 minutes <T<=4 hours	1 day's charge
4 hours <T<= 12 hours	3 days charge
T>12 hours	3 days charge plus 1 day's charge for each full hour beyond 12 hours

Note: 1 (one) day's charge shall be calculated by dividing the monthly recurring charge by 30 (thirty)



- 10.1.3.2 The planned maintenance should not exceed once in a quarter and the maximum allowable outage due to the planned outage is 0.45% of total hours in any quarter (3.24 hours per month). Any planned outage beyond 0.45% shall be considered unavailability to calculate service unavailability credits.
- 10.1.3.3 In case the above-mentioned parameters exceed for consecutive three months then BSCCL shall have the right to terminate the Service Agreement with the Service provider.
- 10.1.3.4 Compensation due for failure to meet "Availability" requirements will be adjusted from periodic rental charge payment of the respective tenderer.
- 10.1.3.5 The total maximum aggregated compensation payable by the respective tenderer to BSCCL in any month shall not exceed the total monthly recurring charge (MRC). The combined cumulative compensation to be issued during the contract period shall be limited to 20% of the total contract value.
- 10.1.3.6 Failures, interruptions, defects, or delays in transmission due to any of the following reasons shall not be counted toward the calculation of service downtime
- Any Force Majeure events
  - Any interruptions resulting from defects in BSCCL end equipment
  - Any service modification or alteration through mutual agreement between BSCCL and the Service provider
- 10.1.3.7 The tenderer shall provide BSCCL with the necessary access to the router-looking glass.
- 10.1.3.8 The tenderer is required to provide comprehensive service support on a 24 x 7 basis from the date of commencement of the services for the entire agreement **period** without any additional fees and charges.
- 10.1.3.9 In order to protect from DDoS attack mitigation, the tenderer has to allow remote Black holing of malicious IP addresses (/32) through BGP announcements from the BSCCL end. **Blackholing can be done based on community or separate black-hole BGP peering.**
- 10.1.3.10 The successful tenderer shall support dual stack IPv6 & 4-Byte ASN implementation in addition to IPv4 and 2-Byte ASN.
- 10.1.3.11 The successful tenderer shall submit Escalation Matrix to communicate any fault-related issues.
- 10.1.3.12 Schedule maintenance window must notify BSCCL at least 72 hours in advance.
- 10.1.3.13 All Scheduled testing requirements shall be notified at least 7 (seven) days prior to the testing. Test plans shall be provided at least seven business days prior to the test.
- 10.1.3.14 The service provider shall provide the mechanisms to BSCCL, to measure and monitor the SLA requirements mentioned above.





- 10.1.4 Each circuit will be activated initially for one year; then after successful completion of one year, it will be renewed for another year. But, if the performance of any circuit is not satisfactory to BSCCL. then the circuit will not be renewed for the second year, also no additional circuit will be activated with that tenderer.
- 10.1.5 BSCCL can renew the circuits for more than 2 (two) years (if require) with mutual consent.
- 10.2 Service Level Agreement (SLA) shall be signed between BSCCL and the Successful tenderer which should include at least the above items as mentioned in the clause 10.1.

## 11. LEAD TIME TO ESTABLISH THE SERVICE

- 11.1 The tenderer, in the bid, shall clearly indicate the lead time to establish the service after the work order is issued to them, which should not be more than 4 (four) weeks after the issuance of the Work Order or after the signing of the service order form.
- 11.2 There will have a maximum of 03 (three) days of the testing period of each circuit after being commissioned a circuit.
- 11.3 Within this test period, the problem (if any) needs to be resolved.

## 12. FINANCIAL PROPOSAL

- 12.1 All prices must be quoted in US Dollars.
- 12.2 VAT and Tax payable in Bangladesh will be borne by BSCCL.
- 12.3 The offered price should be inclusive of any applicable tax, GST, or duties payable to Singapore Government. Any applicable tax, GST, and duties payable outside Bangladesh shall be borne by the tenderer.
- 12.4 As BSCCL will not deliver/sell the purchased IP transit bandwidth in Singapore, GST will not be applicable for BSCCL. So, if the GST is mentioned in invoices BSCCL will deduct GST before remitting the billed amount.
- 12.5 The amount of discount, if any, must be clearly mentioned.
- 12.6 The evaluation will be conducted by adding all recurring and non-recurring charges over a period of two years contract period.
- 12.7 The tenderer shall submit two separate the financial offer as per the table provided in Annexure-D for Lot-01 and Annexure-E for Lot-02.

## 13. Bills and Payments

- 13.1 BSCCL will pay the recurring charges on a post-paid basis.
- 13.2 When a monthly charge applies for a portion of a billing month (whether due to an installation or discontinuation of service during the billing month, a rate change during the month, or otherwise) the partial charge is to be calculated based on a daily rate (1/30<sup>th</sup> of monthly charge).
- 13.3 Invoices shall be submitted by the Tenderer headed [billing@bsccl.com](mailto:billing@bsccl.com) with a copy to [billing.bsccl@gmail.com](mailto:billing.bsccl@gmail.com) within 10 working days after each month.
- 13.4 The burstable usage information including graph and calculation of raw data (as per Annexure-H) shall be mailed to [billing.bsccl@gmail.com](mailto:billing.bsccl@gmail.com).





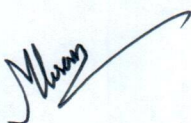
- 13.5 If there is any dispute in any bill BSCCL will raise an objection in writing within 30 (Thirty) days of receiving the invoice.
- 13.6 However, the undisputed amount will be paid within 30 days of receiving the invoice.
- 13.7 BSCCL needs to obtain permission from the Central Bank of Bangladesh for making foreign payments. In such cases, BSCCL needs three or four months to pay the first invoice but once the permission is obtained all the invoices will be cleared within 30 days of receiving the invoices.
14. **BSCCL reserves the right to accept or reject any or all bids without assigning any reason whatsoever.**
15. **Date of Submission:**

Last Date & Time for submitting bid: **Month xx, 2023 12:00 BST (GMT+6)**

Date & Time for opening the bid: **Month xx, 2023 12:30 BST (GMT+6)**

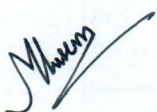
16. **Evaluation of the offers and award of the contract**

- 16.1 The Tender Evaluation Committee (TEC) will first examine the technical proposals of the two (Lot-01 & Lot-02) bids separately received within the prescribed date and time to determine the eligibility based on the **clause 4** of the bid document and other related clauses of this bid. Only the “**Eligible**” bids will be considered for further evaluation. The evaluation committee will then examine every “**Eligible**” bid to determine technical responsiveness as per **clause 10.1.1.3** and **clause 10.1.1.4** of the bid document in conformity of other clauses related to the evaluation and declare those bids as “**Responsive**” who fulfill the RTD latency requirements for **Lot-01** and **Lot-02** respectively.
- 16.2 Only the bids to be determined as “**Responsive**” after this stage of general and technical evaluation will be considered for financial evaluation. During the financial evaluation, the TEC will check the financial offers of the responsive bids to determine their conformity against the requirements of BSCCL mentioned in the bid document. The TEC will also check and correct the arithmetic errors if any. If any arithmetic error is found during the examination, the TEC will make the necessary correction and will inform the concerned tenderer regarding the error and the proposed correction. If the tenderer refuses to accept the proposed correction, then his bid will be declared as “**Non-Responsive**” by the TEC.
- 16.3 Upon completion of the financial evaluation, the TEC will determine the ‘**Evaluated Price**’ for each responsive bid for **Lot-01 and Lot-02 separately**. Tenderer shall note that the ‘**Evaluated Price**’ may not be the same as the ‘**Quoted Price**’. After the determination of the ‘**Evaluated Price**’ for each responsive bid, the TEC will list the responsive bids in the chronology of the ‘**Evaluated Price**’ with the lowest value of the ‘**Evaluated Price**’ at the top of the list; the tenderer with the next higher value of the ‘**Evaluated Price**’ shall be in second place and so on.
- 16.4 BSCCL shall select successful tenderer from each lot (**Lot-01 and Lot-02**) using the clause **16.2 and 16.3** respectively.





- 16.5 The lowest evaluated price of Lot-01 shall be selected as "1st lowest successful tenderer" for Lot-01 of the service titled "*Invitation of Bid for taking lease of International Internet Bandwidth from Singapore for Operation of BSCCL's IP Transit Service*".
- 16.6 Similarly, the lowest evaluated price of Lot-02 shall be selected as "1<sup>st</sup> lowest successful tenderer" for Lot-02 of the service titled "*Invitation of Bid for taking lease of International Internet Bandwidth from Singapore for Operation of BSCCL's IP Transit Service*".
- 16.7 The activation of the 6x10G circuits will be as follows:
1. In the first stage, BSCCL will activate 02 (two) 10G circuits from the Lot-01 and 02 (two) 10G circuits from the Lot-02. But the changes in sequence of activation shall be made by BSCCL as per requirement.
  2. In the second stage, BSCCL will activate 01 (one) 10G circuits from the Lot-01 and 01 (one) 10G circuits from the Lot-02. But the changes in sequence of activation shall be made by BSCCL as per requirement.





## Annexure-A

### Declaration to have the legal rights to sell the IP Bandwidth internationally from Singapore

We ....[Name of Tenderer]..... are submitting our bid for "Invitation of Bid for taking lease of International Internet Bandwidth from Singapore for Operation of BSCCL's IP Transit Service". We are declaring that ....[Name of Tenderer]..... has the legal rights to sell the IP Bandwidth Internationally from Singapore.

Dated ..... day of the month..... 202.....

\_\_\_\_\_  
Signature & Seal





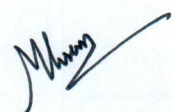
## Annexure-B

### Declaration on Non-bankrupt in any country.

We .....[Name of Tenderer]..... are submitting our bid for "Invitation of Bid for taking lease of International Internet Bandwidth from Singapore for Operation of BSCCL's IP Transit Service". We also declare that.....[Name of Tenderer]..... is not insolvent, not bankrupt, not in the process of bankruptcy.

Dated ..... day of the month..... 202.....

\_\_\_\_\_  
Signature & Seal





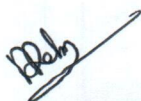
## Annexure-C

### Declaration to have the legal capacity to enter into a contract with BSCCL.

We .....[Name of Tenderer]..... are submitting our bid for "Invitation of Bid for taking lease of International Internet Bandwidth from Singapore for Operation of BSCCL's IP Transit Service". We are declaring that.....[Name of Tenderer]..... has the legal capacity to enter into a contract with BSCCL

Dated ..... day of the month..... 202.....

\_\_\_\_\_  
Signature & Seal





## Annexure-D

### Financial Offer for IP Transit Service:

**Option for Lot-01: 7.5 Gbps Committed Bandwidth with up to 2.5 Gbps Burstable (for each 10G IP Port):**

(All Prices in US\$)

Data Center	NRC (if any)	MRC per Mbps for Committed (7.5 Gbps) Bandwidth		MRC per Mbps for Burstable (up to 2.5Gbps) Bandwidth		Total Price for each 10G for 2 years (as per formula)
		Year-1	Year-2	Year-1	Year-2	
Equinix SG3, Singapore						

**Formula for Total price** = NRC + (12 x Per Mbps Committed MRC x 7500 for 1<sup>st</sup> yr + 12 x Per Mbps MRC x 2500 for 1<sup>st</sup> yr) + (12 x Per Mbps Committed MRCx7500 for 2<sup>nd</sup>yr + 12 x Per Mbps MRC x 2500 for 2<sup>nd</sup> yr)

**For example**, follow the below table (for both Lot-01 and Lot-02).

Data Center	NRC (if any)	MRC per Mbps for Committed (7.5 Gbps) Bandwidth		MRC per Mbps for Burstable (upto 2.5Gbps) Bandwidth		Total Price for each 10G for 2 years (as per formula)
		Year-1	Year-2	Year-1	Year-2	
Equinix SG3	800	0.6	0.5	0.4	0.3	120,800

Total price = NRC + (Total MRC for committed bandwidth for 1st year tenors + Total MRC for burstable bandwidth for 1st-year tenor) + (Total MRC for committed bandwidth for 2nd year tenors + Total MRC for burstable bandwidth for 2nd-year tenor)

= 800 + (12 x 0.6 x 7500 + 12 x 0.4 x 2500) + (12 x 0.5 x 7500 + 12 x 0.3 x 2500)

= 120,800



## Annexure-E

### Financial Offer for IP Transit Service:

**Option for Lot-02: 7.5 Gbps Committed Bandwidth with up to 2.5 Gbps Burstable (for each 10G IP Port):**

(All Prices in US\$)

Data Center	NRC (if any)	MRC per Mbps for Committed (7.5 Gbps) Bandwidth		MRC per Mbps for Burstable (up to 2.5Gbps) Bandwidth		Total Price for each 10G for 2 years (as per formula)
		Year-1	Year-2	Year-1	Year-2	
Equinix SG3, Singapore						

**Formula for Total price** = NRC + (12 x Per Mbps Committed MRC x 7500 for 1<sup>st</sup> yr + 12 x Per Mbps MRC x 2500 for 1<sup>st</sup> yr) + (12 x Per Mbps Committed MRCx7500 for 2<sup>nd</sup>yr + 12 x Per Mbps MRC x 2500 for 2<sup>nd</sup> yr)

**For example,** follow the below table (for both Lot-01 and Lot-02).

Data Center	NRC (if any)	MRC per Mbps for Committed (7.5 Gbps) Bandwidth		MRC per Mbps for Burstable (upto 2.5Gbps) Bandwidth		Total Price for each 10G for 2 years (as per formula)
		Year-1	Year-2	Year-1	Year-2	
Equinix SG3	800	0.6	0.5	0.4	0.3	120,800

Total price = NRC + (Total MRC for committed bandwidth for 1st year tenors + Total MRC for burstable bandwidth for 1st-year tenor) + (Total MRC for committed bandwidth for 2nd year tenors + Total MRC for burstable bandwidth for 2nd-year tenor)

= 800 + (12 x 0.6 x 7500 + 12 x 0.4 x 2500) + (12 x 0.5 x 7500 + 12 x 0.3 x 2500)

= 120,800

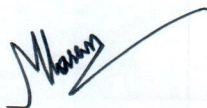


## Annexure-F

RTD (Round Trip Delay) Latency measurement for Lot-01:

Sl.	Country/Region	Country/Region IP Address	Expected RTD from Singapore	Latency submitted by Tenderer from their router at Singapore
1	USA (Trans-Pacific)	54.244.242.4	180~220 ms	
2	Asia Pacific (Singapore)	101.32.110.254	1~5 ms	
3	Asia Pacific (Japan)	58.138.102.205	90~110 ms	
4	Asia Pacific (Hong Kong)	59.148.233.201	30~40 ms	
5	Asia Pacific (China)	120.79.217.0	170~200 ms	
6	Asia Pacific (India)	23.205.88.201	60~90 ms	

**N.B:** Tenderer needs to measure the latency from the tenderer's gateway router located in Singapore and needs to share the snapshot of ping and trace reports separately.





### Annexure-G

RTD (Round Trip Delay) Latency measurement for Lot-02:

Sl.	Country/Region	Country/Region IP Address	Expected RTD from Singapore	Latency submitted by Tenderer from their router at Singapore
1	USA (Trans-Pacific)	54.244.242.4	180~220 ms	
2	Asia Pacific (Singapore)	101.32.110.254	1~5 ms	
3	Asia Pacific (Japan)	58.138.102.205	90~110 ms	
4	Asia Pacific (Hong Kong)	59.148.233.201	30~40 ms	
5	Asia Pacific (China)	120.79.217.0	170~200 ms	
6	Asia Pacific (India)	23.205.88.201	60~90 ms	
7	Asia Pacific (Malaysia)	210.48.204.65	10~15ms	
8	Asia Pacific (Taiwan)	168.95.245.3	160~180ms	
9	Asia Pacific (South Korea)	210.205.48.1	70~90 ms	
10	Asia Pacific (Australia)	114.129.184.1	90~110ms	
11	Asia Pacific (Indonesia)	103.86.156.1	10~20ms	
12	Asia Pacific (Thailand)	122.155.237.1	25~40ms	
13	Asia Pacific (Vietnam)	27.65.192.1	25~40ms	
14	Asia Pacific (Phillipine)	114.108.252.1	25~40	
15	Global (cloudflare)	23.227.38.1	1~3ms	
16	Global (fastly)	151.101.64.1	1~3ms	

**N.B:** Tenderer needs to measure the latency from the tenderer's gateway router located in Singapore and needs to share the snapshot of ping and trace reports separately.





## Annexure-H

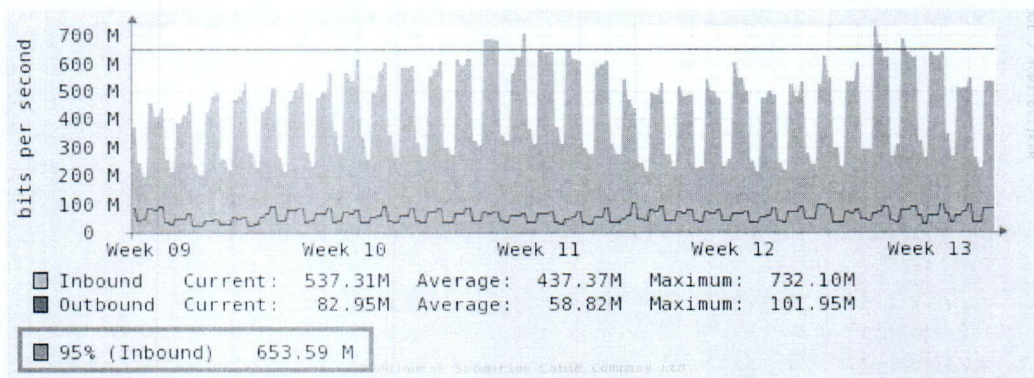
**Definition of Committed Bandwidth:** Committed Bandwidth means the Bandwidth usage committed to by the provider on a monthly basis, as specified in the Order Form.

**Definition of 95th percentile:** 95th Percentile is a widely used mathematical calculation to evaluate the regular and sustained bandwidth utilization of a connection. According to the 95% rule, the monthly samples are sorted; the top 5% of both the inbound and outbound traffic samples are discarded; and the next highest remaining data sample on either the inbound or outbound is the "95th Percentile" value. This number is used as the basis for the calculation of any additional monthly charges. If the 95th percentile number falls below the minimum monthly committed amount, no additional charges will occur.

**Definition of Burstable Bandwidth:** Burstable bandwidth means that there is no limit (i.e. cap) as to how fast data transfer can occur. The only limits will be the physical limits of the hardware and the network connections themselves. Burstable bandwidth will be calculated as below formula:

**Burstable Bandwidth = 95<sup>th</sup> percentile of Bandwidth usage – Committed Bandwidth**

Example:



If a customer has committed to 600Mbps per month as per Order Form and according to the MRTG data samples for one month and sorts them from highest to lowest, discarding the top 5%. For the purpose of this example, the 95th percentile for the month is 653 Mbps. The company will bill the customer for the additional charges of 653 Mbps, minus the previously invoiced 600 Mbps of contractually committed bandwidth, or 53 Mbps. The 53Mbps is treated as burstable bandwidth and will be invoiced for.