



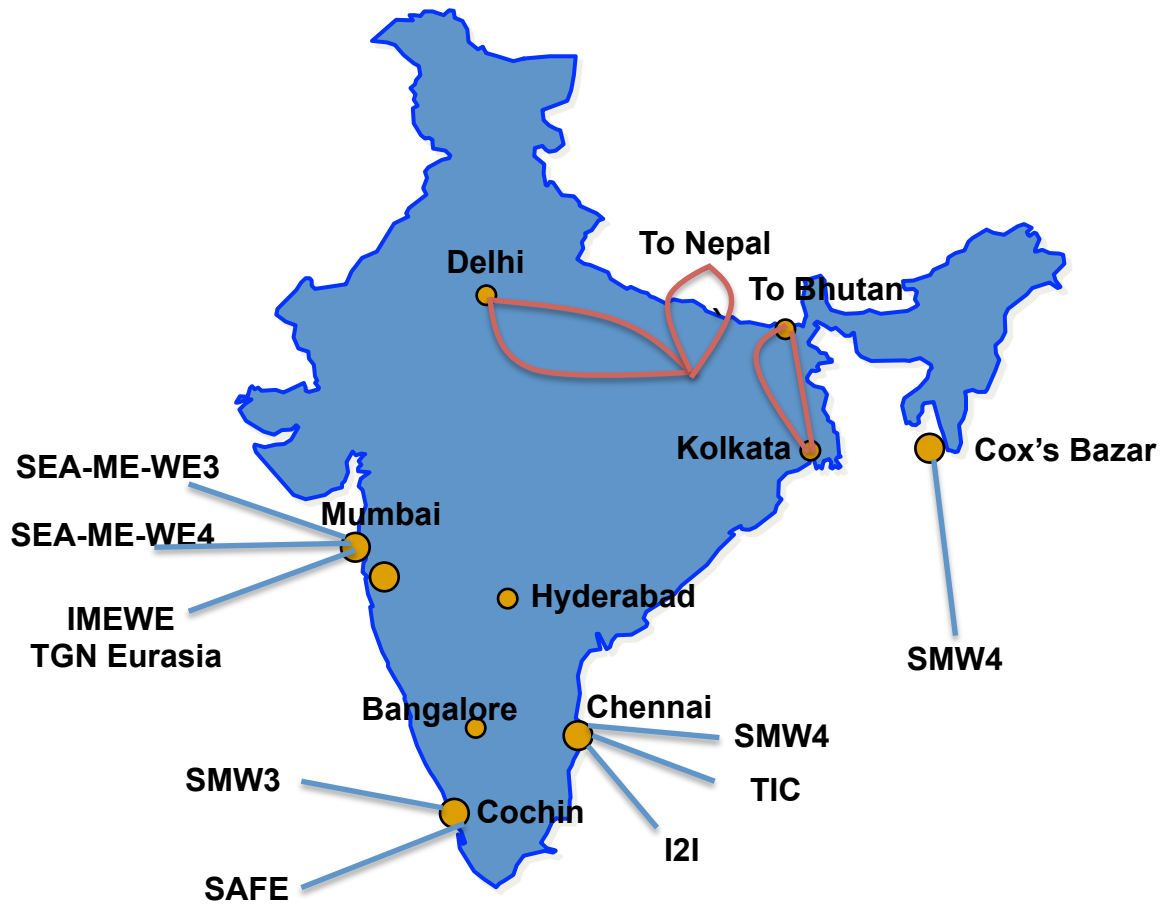
Peering : Success or Failure

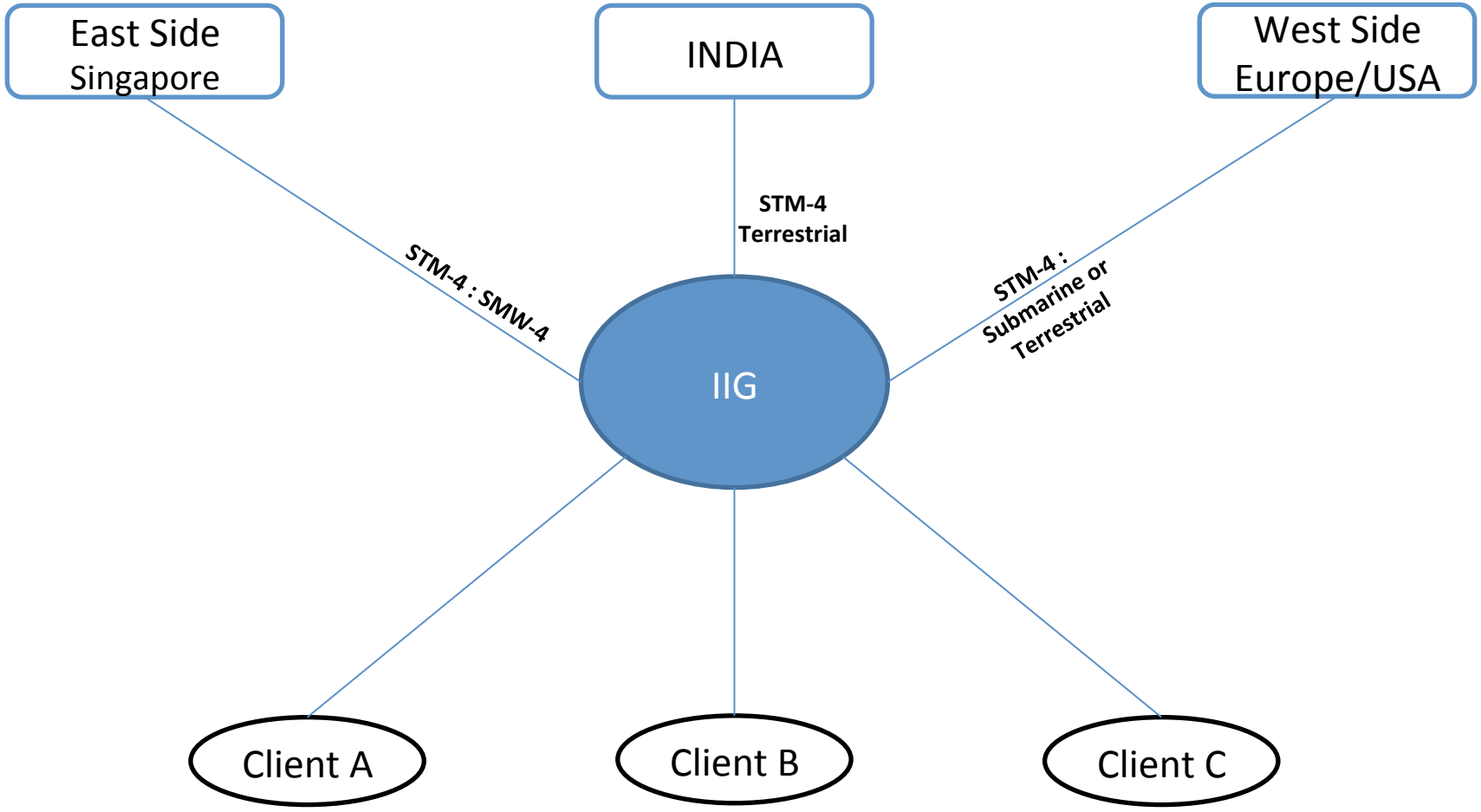
Simon Sohel Baroi

Sr. Manager, ITC-IIG

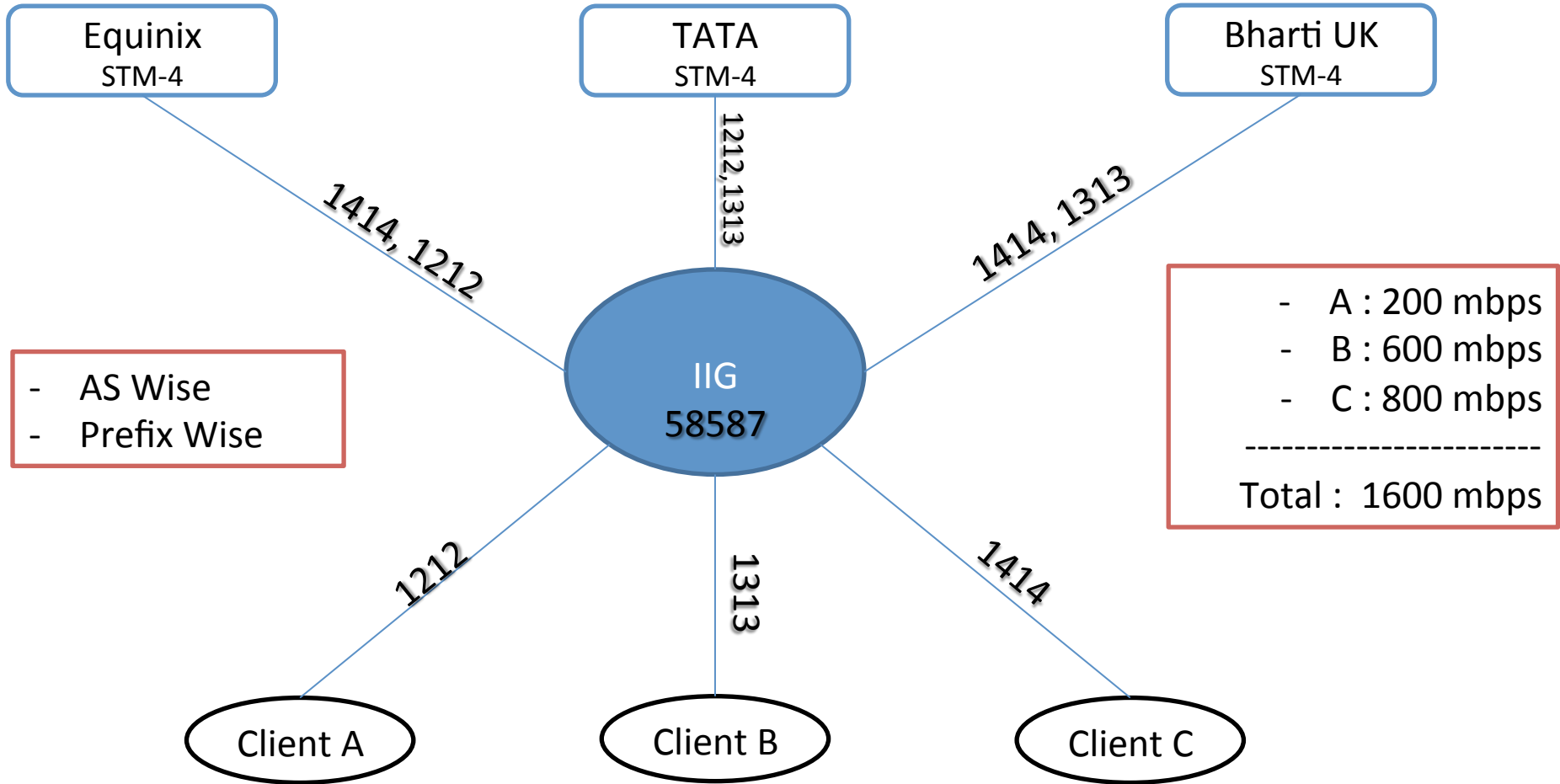
simon.baroi@fiberathome.net

SANOG 24, India

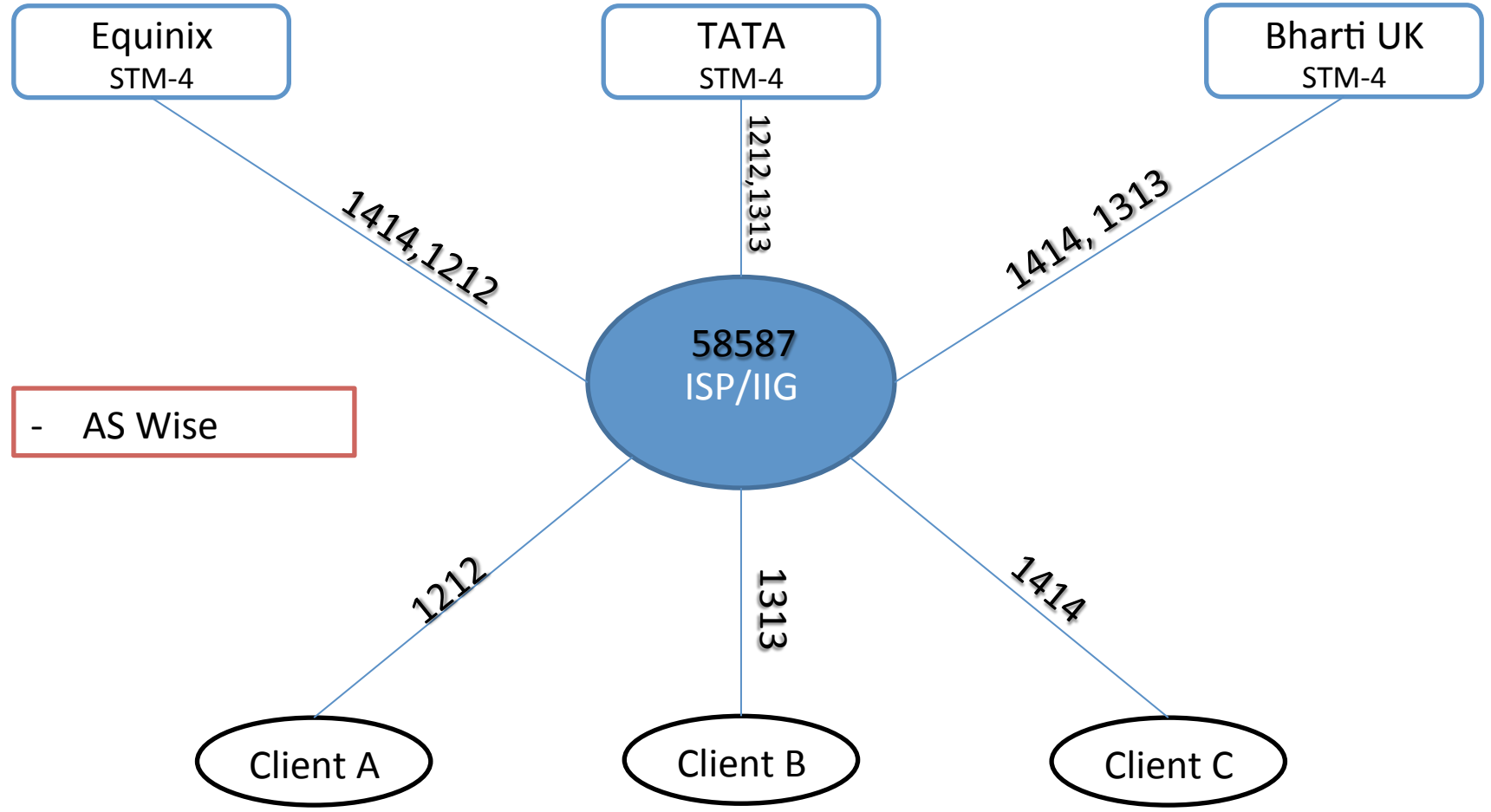


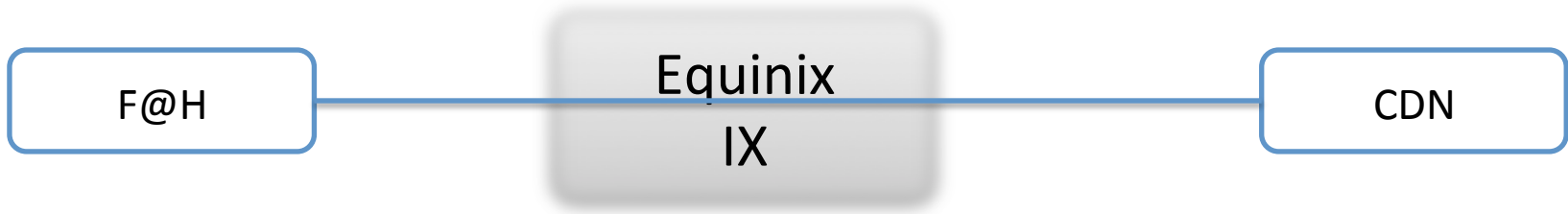


IIG : International Internet Gateway



Congestion





Peer Port Name	Avg Inbound (Mbps)	Avg Outbound (Mbps)	Max Inbound (Mbps)	Max Outbound (Mbps)
AKAMAI-SG1-GIGE1-01	3.08	0.52	13.9	1.57
AMAZON-SG2-GIGE1-599	7.73	4.19	21.26	9.25
BAYANTEL-SG1-GIGE1-00	0.61	0.6	1.88	2.29
BBCONNECT-SG1-GIGE1-00	0.11	0.07	1.44	1.23
BHARTIAIRTEL-SG1-GIGE1-00	0.29	30.29	3.51	53.68
CATTELE-SG1-GIGE1-00	0.14	0.04	1.21	1.12
CATTELE-SG1-GIGE1-01	0.72	0.28	4.3	2.04
CDNET-SG1-GIGE1-04	4	0.42	18.16	0.96
CDNET-SG1-GIGE1-05	3.79	0	14.41	0
CELCOM-SG1-GIGE1-00	0.06	0.08	0.55	0.62
CHUNGHWA-SG1-GIGE1-00	0.44	0.11	1.87	1.12
CLOUDFLARE-SG1-GIGE1-599	4.27	1.76	14.06	20.72
CSLOXINFO-SG1-GIGE1-00	0.05	0.01	1.2	0.2
DHIRAAGU -SG1-GIGE1-00	0.06	0.1	0.68	1.25
DIGITALOCEAN-SG2-GIGE1-00	0.14	0.02	4.55	0.19
DIGITEL-SG1-GIGE1-01	0	0.07	0	0.75
EDGECAST-SG1-GIGE1-00	3.67	0.87	13.23	1.82
EXCELCOMINDO-SG1-GIGE1-00	0.06	0.13	1.76	1.43

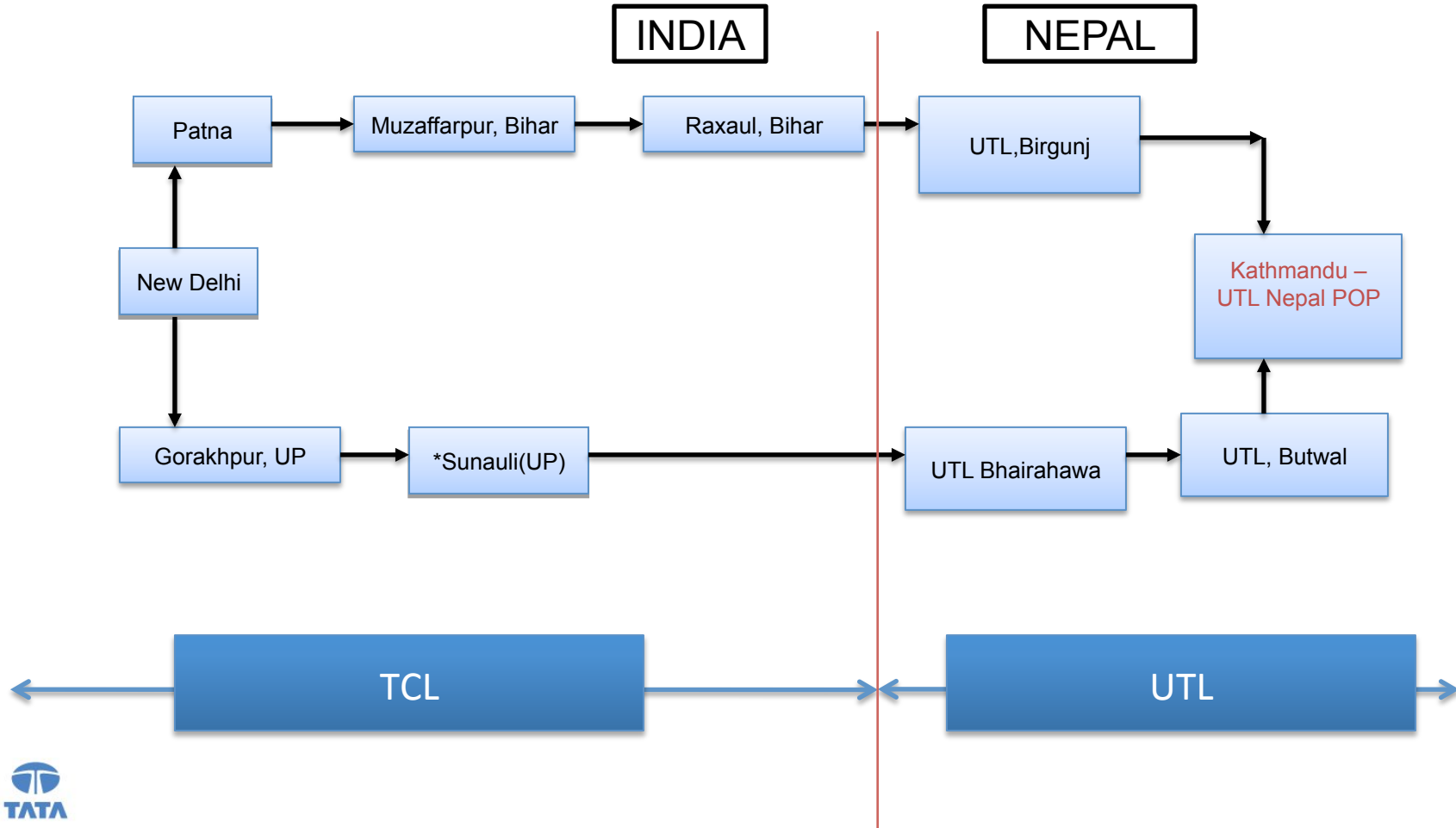
Unknown is Very Near :

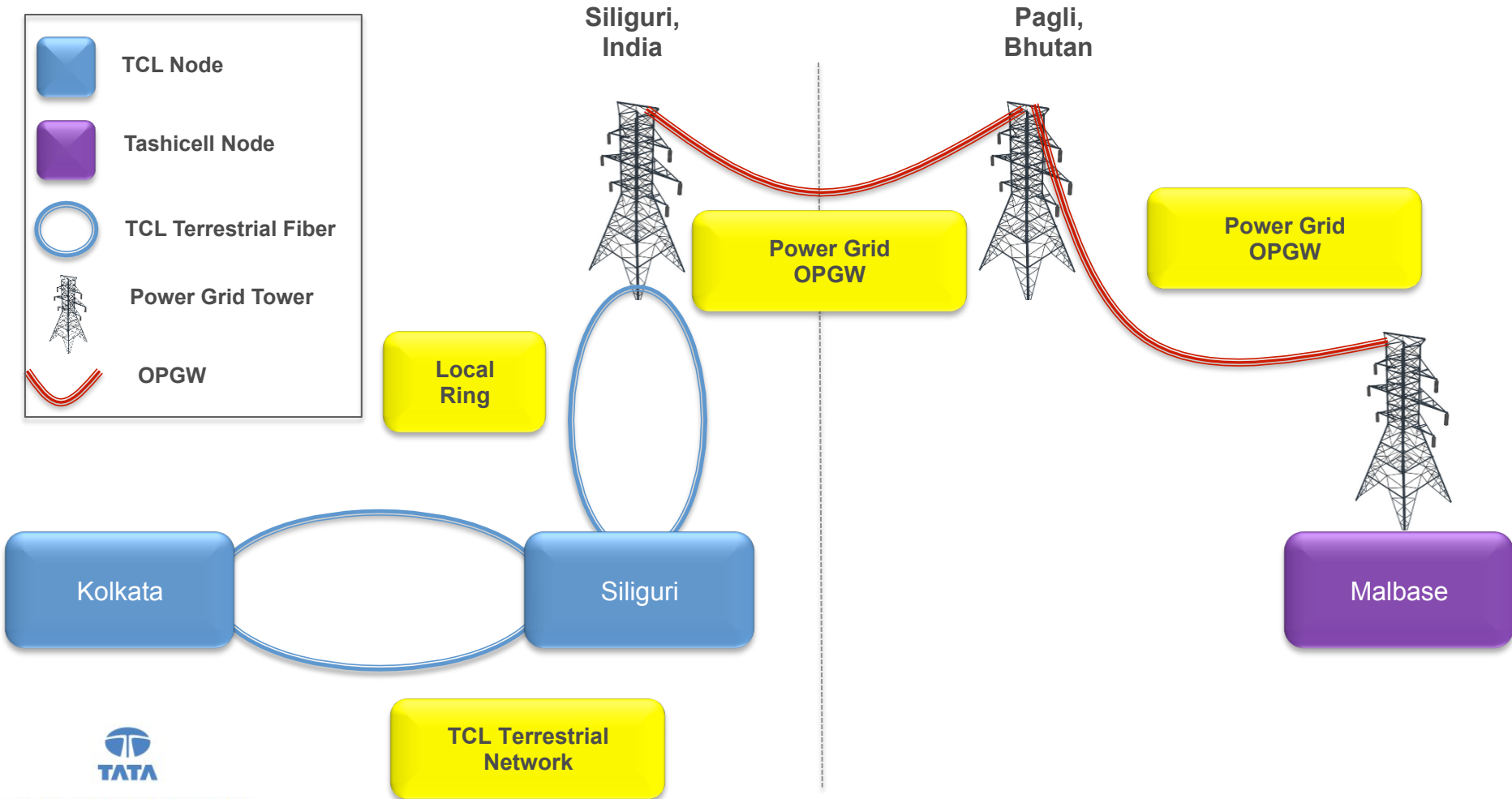
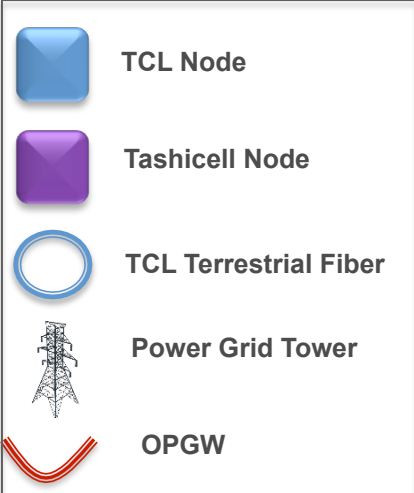
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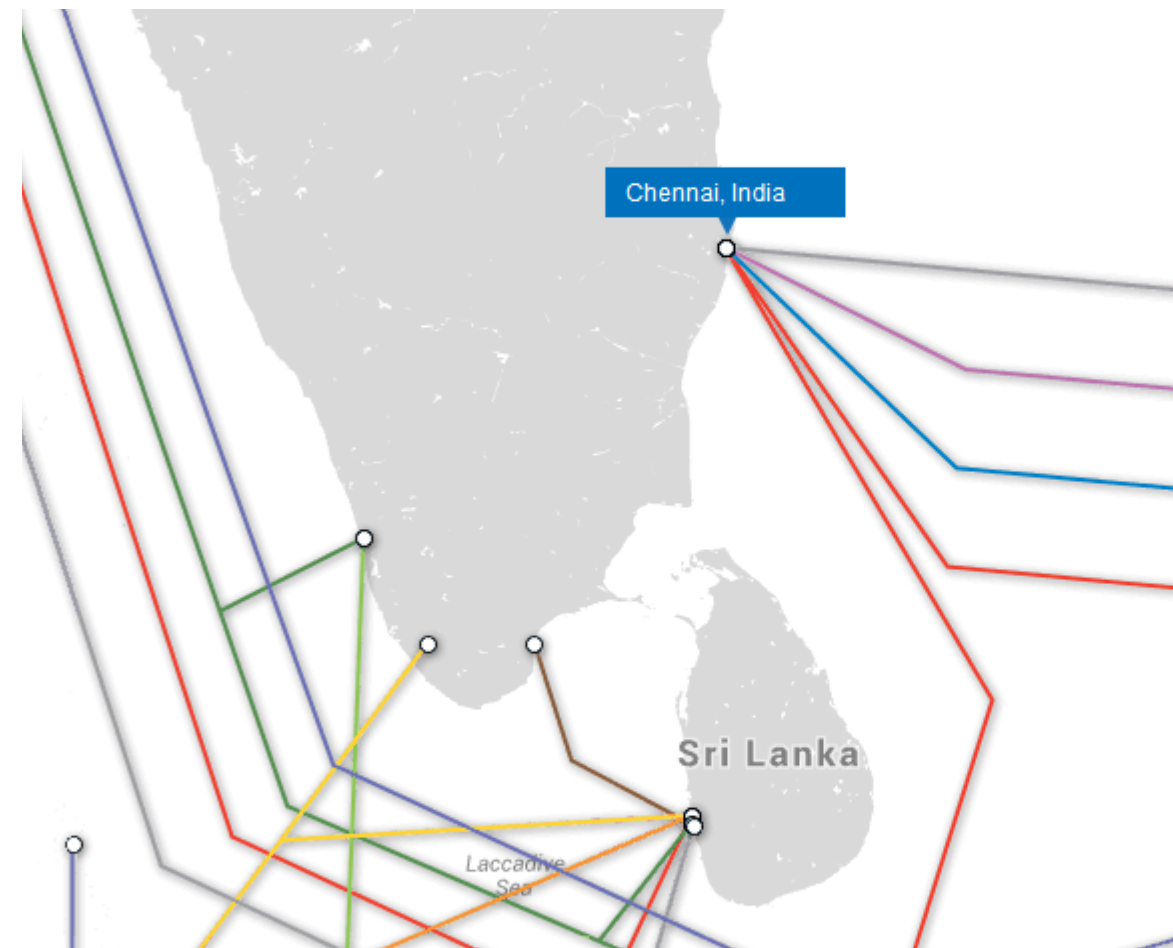
AMAZON-SG2-GIGE1-599	7.73	4.19	21.26	9.25
CATTELE-SG1-GIGE1-01	0.72	0.28	4.3	2.04
CDNET-SG1-GIGE1-04	4	0.42	18.16	0.96
CDNET-SG1-GIGE1-05	3.79	0	14.41	0
CLOUDFLARE-SG1-GIGE1-599	4.27	1.76	14.06	20.72
DIGITALOCEAN-SG2-GIGE1-00	0.14	0.02	4.55	0.19
EDGECAST-SG1-GIGE1-00	3.67	0.87	13.23	1.82
FACEBOOK-SG1-GIGE1-00	37.61	31.43	95.36	73.1
GLOBALTRANS-SG1-GIGE1-00	0.37	0.66	5.81	4.35
GLOBTRANS-SG1-GIGE1-599-00	0.48	0.3	4.3	2.46
GODADDY-SG2-GIGE1-01	0.44	0.12	6.2	0.62
INTERNAP-SG1-GIGE1-00	0.24	0.12	1.65	0.64
INTERNODE-SG1-GIGE1-01	1.17	2.8	4.24	8.02
IPTP-SG1-GIGE1-00	2.28	0.48	8.78	1.25
JASTEL-SG1-GIGE1-599	0.06	0.6	3.74	2.97
MICROSOFT-SG1-GIGE1-00	1.72	1.72	10.32	3.68
PAKTELE-SG1-GIGE1-00	3.76	6.89	11.51	13.21
TELEKOMUNI-SG1-GIGE1-00	0.68	0.11	4.35	0.65
TELEKOMUNI2-SG1-GIGE1-599	0.74	1.25	4.42	3.32
TWITTER-SG1-GIGE1-01-1	0.58	0.76	5.72	2.47
VALVECOP-SG2-GIGE1-00	1.21	0.88	4.26	1.9
VODAFONE-SG1-GIGE1-00	2.08	33.44	10.57	62.43
YAHOO-SG1-GIGE1-599-0	0.64	0	4.88	0.01
YAHOO-SG1-GIGE1-599-1	0.52	0.47	3.64	1.28

- Singapore Route become congested.
- Traffic Engineering is not working.
- Need bigger port of STM-16 / GE / 10GE.
- POS STM-16 is too much Expensive.

*Solution : Reduce the IPLC cost at London Side.
(Traffic Engineering at Layer – 1)*







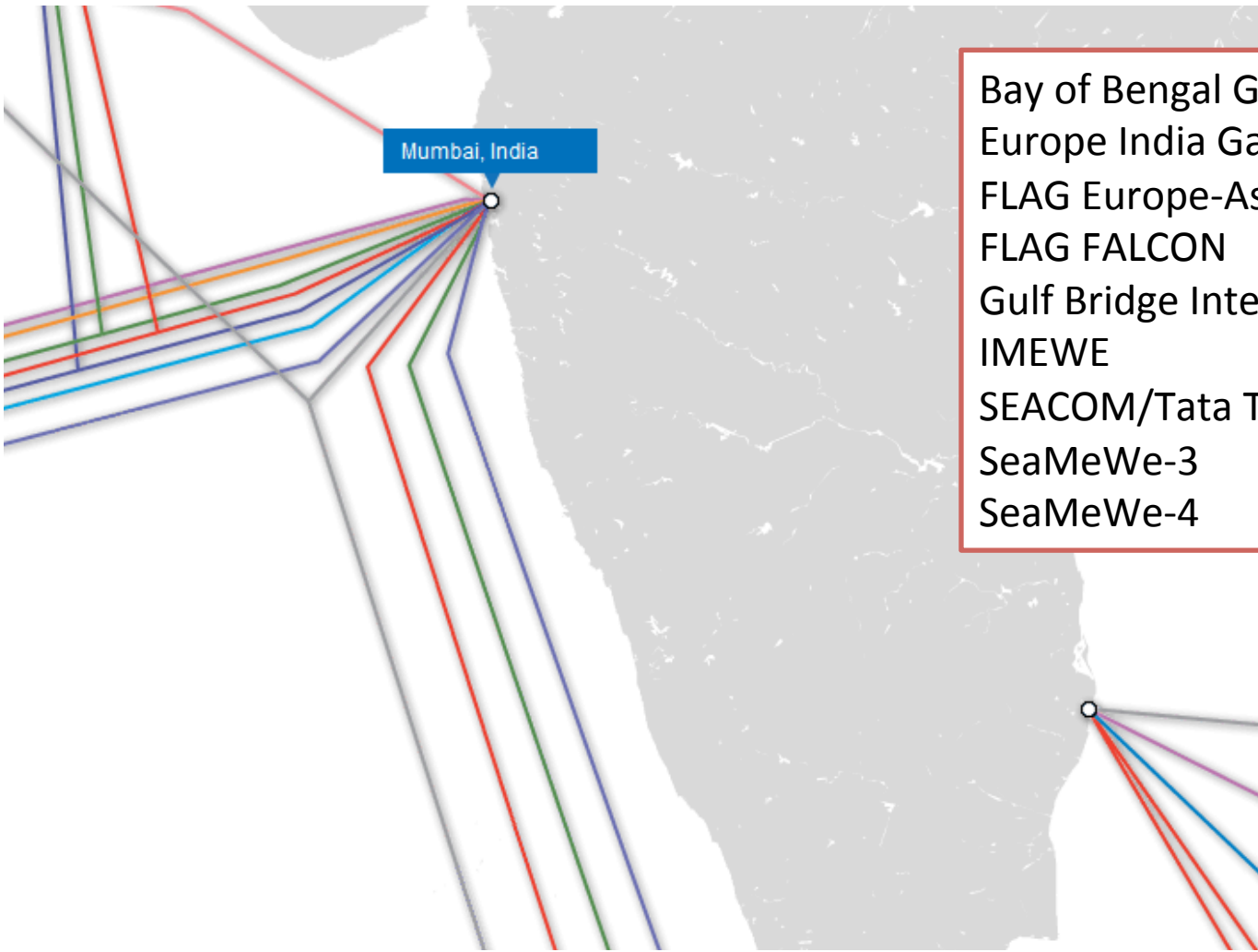
Cables

Bay of Bengal Gateway (BBG)

SeaMeWe-4

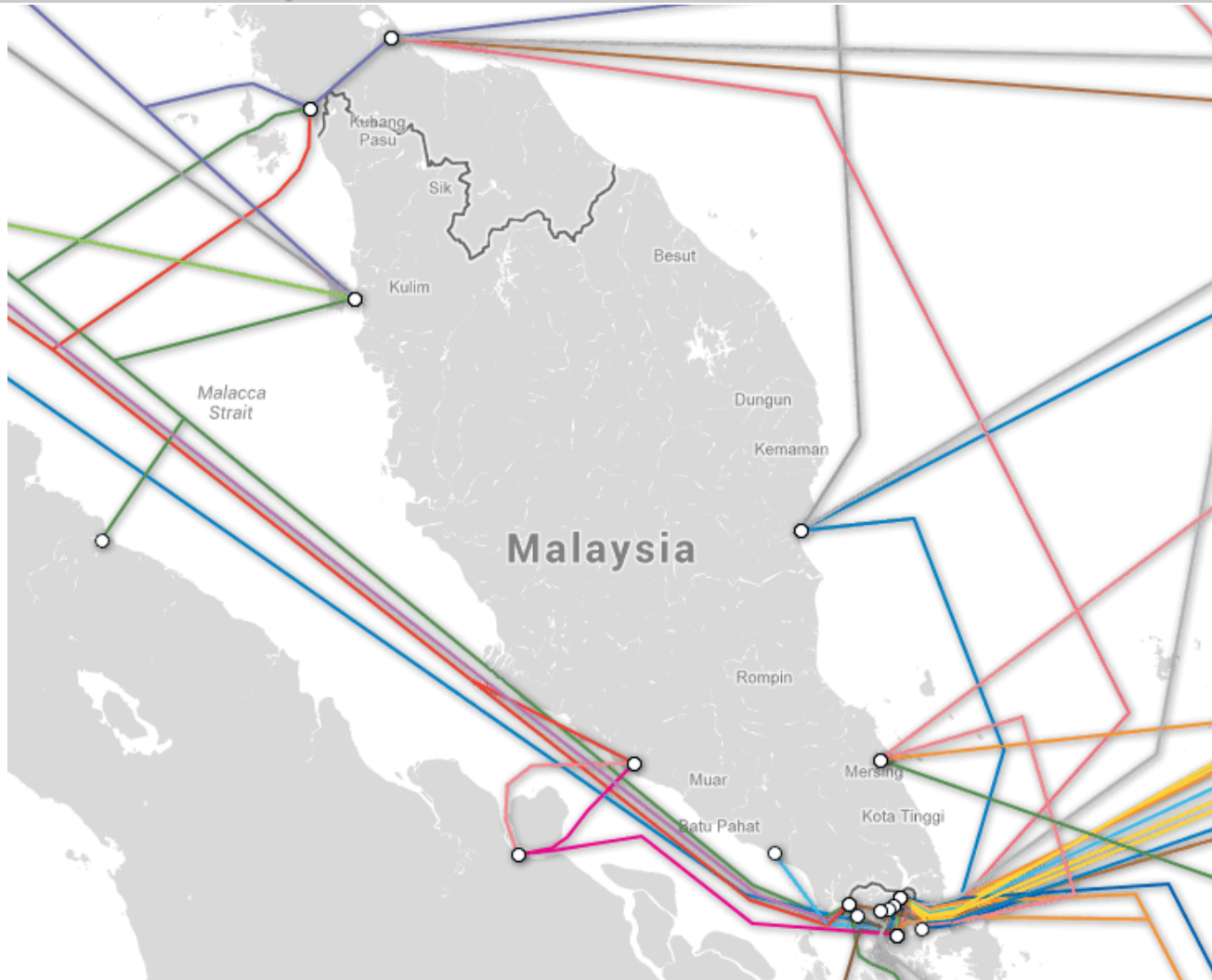
Tata TGN-Tata Indicom

i2i Cable Network (i2icn)



- Bay of Bengal Gateway (BBG)
- Europe India Gateway (EIG)
- FLAG Europe-Asia (FEA)
- FLAG FALCON
- Gulf Bridge International Cable System
- IMEWE
- SEACOM/Tata TGN-Eurasia
- SeaMeWe-3
- SeaMeWe-4

Cables at Malaysia :



Penag :

Bay of Bengal Gateway (BBG)
 FLAG Europe-Asia (FEA)
 SAFE
 SeaMeWe-3

Melaka :

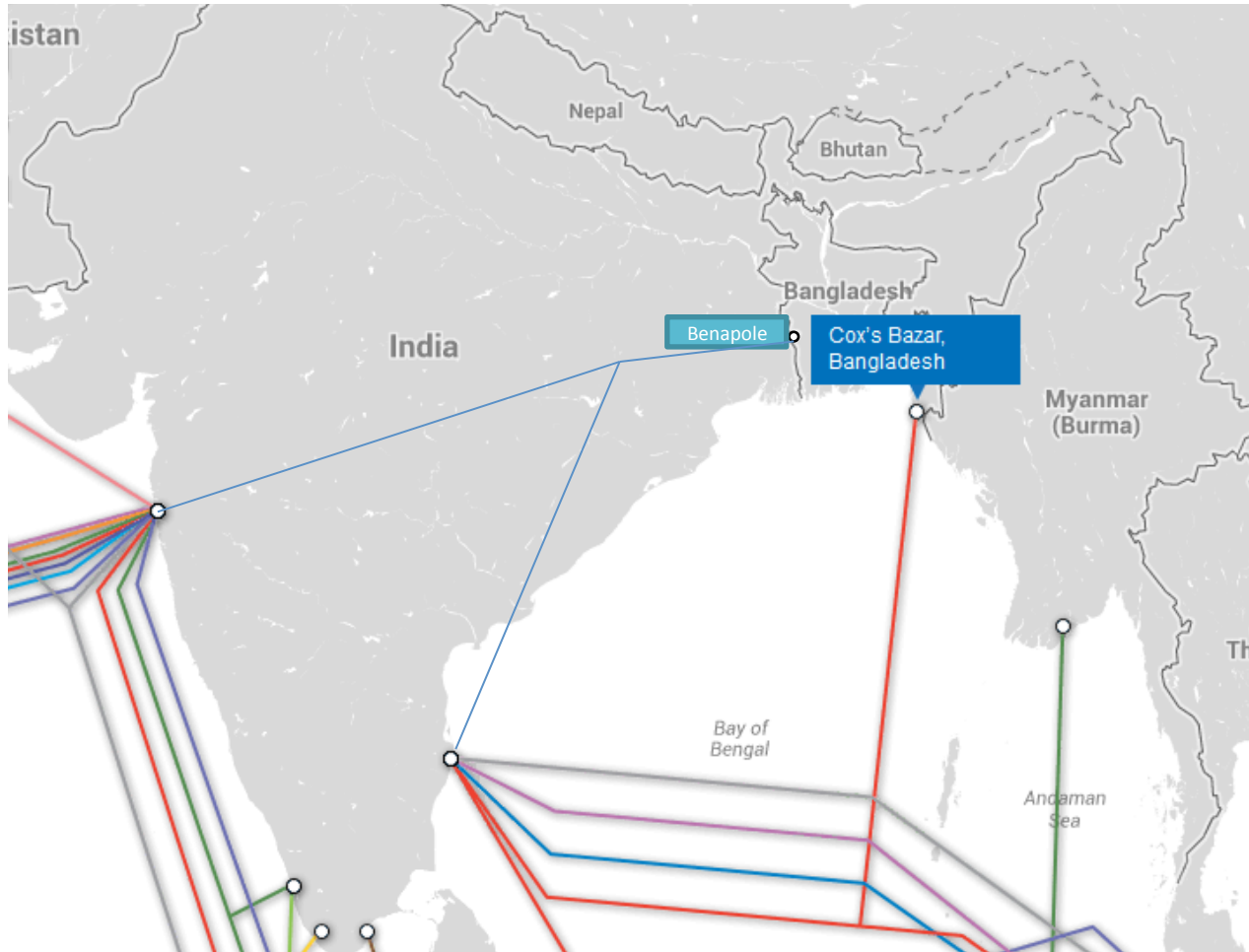
Batam Dumai Melaka (BDM) Cable System
 Dumai-Melaka Cable System
 SeaMeWe-4

Mersing :

Asia Submarine-cable Express (ASE)
 Asia-America Gateway (AAG) Cable System
 SeaMeWe-3

Kuantan :

APCN-2
 Asia Pacific Gateway (APG)
 Malaysia-Cambodia-Thailand (MCT) Cable

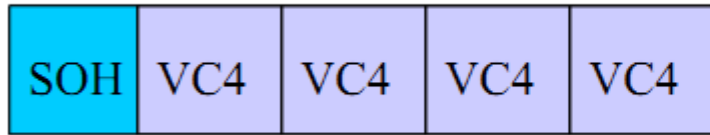
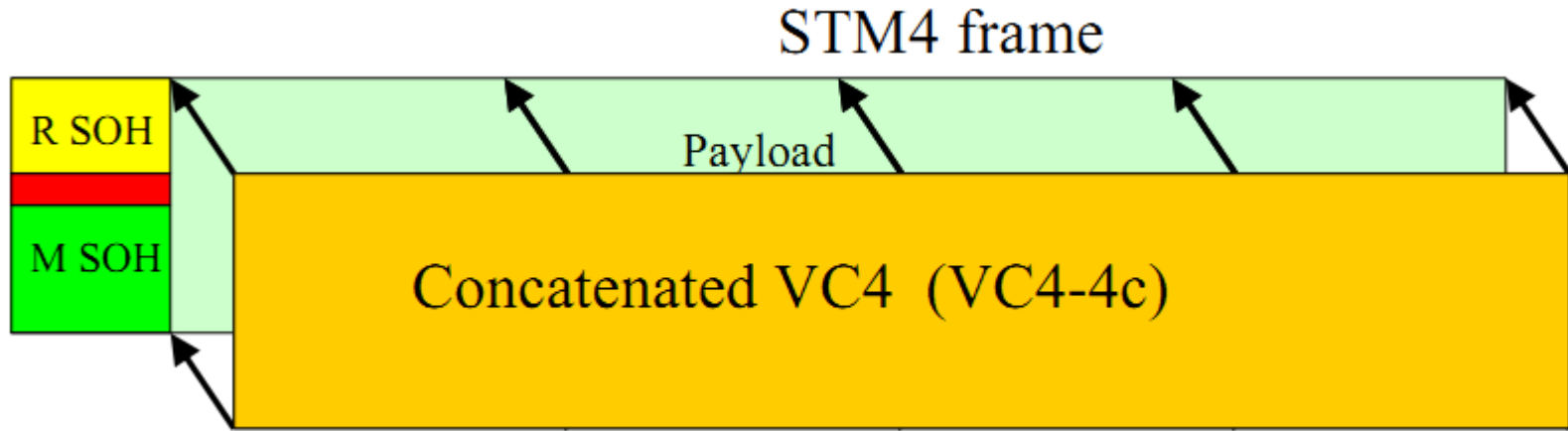


Cable Name :
Sea-Me-We 4

Operator :
Bangladesh Submarine
Cable Company Limited
(BSCCL)

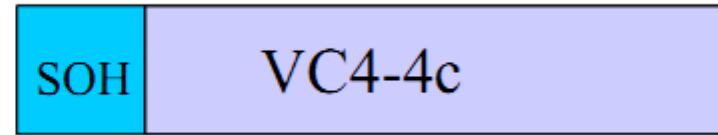
**One Terrestrial
Landing Station with
India.**

SDH	Payload
VC-12 (E1)	2,176 Kbps
VC-3 (DS3)	48,384 Kbps
VC-4 (STM-1)	149,760 Kbps
VC-4_4c (STM-4-POS)	599,040 Kbps
VC-4_16c (STM-16-POS)	2,396,160 Kbps



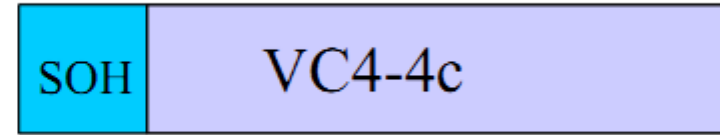
$$149.76+149.76+149.76+149.76$$

599.04

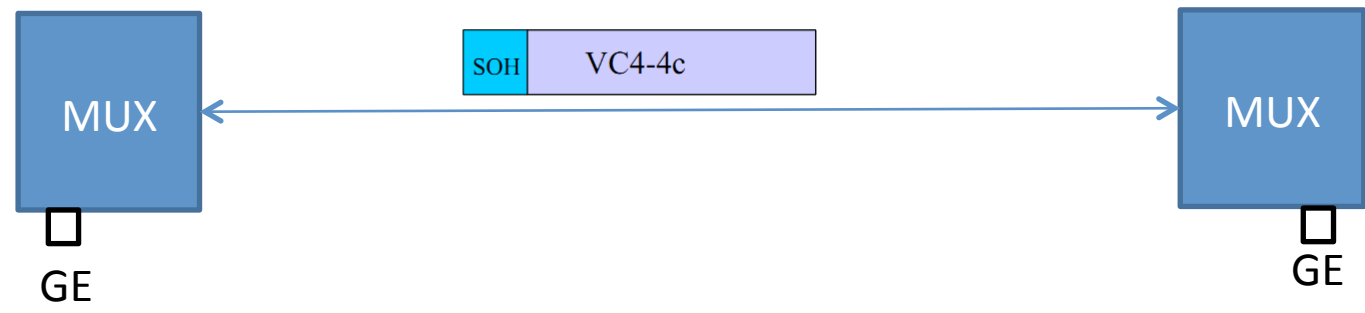


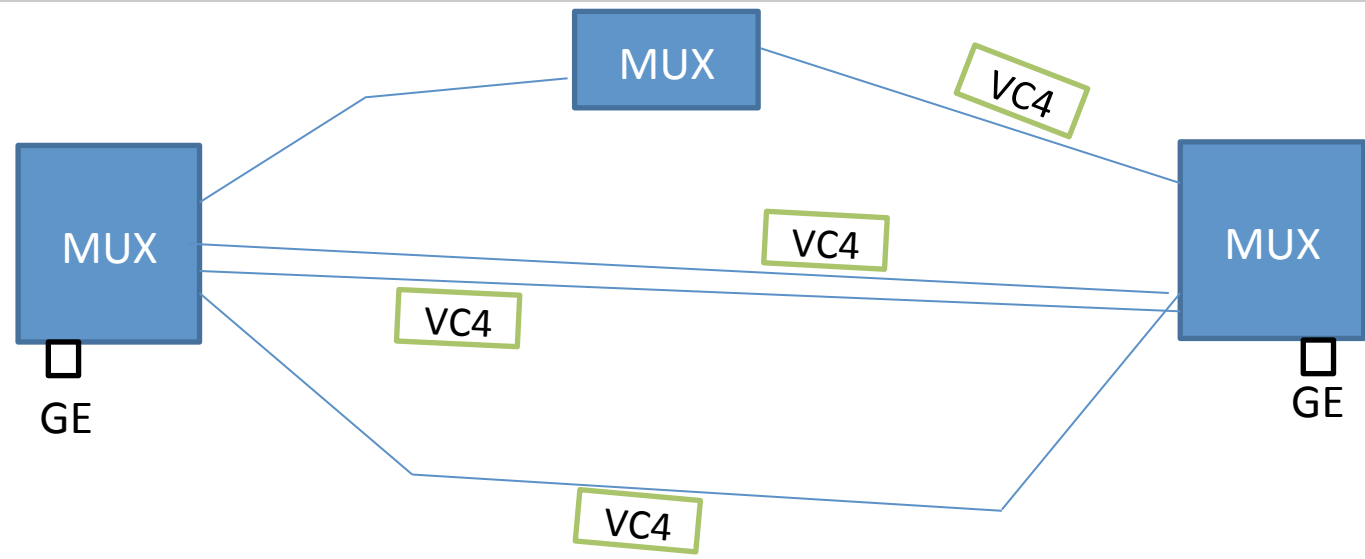
POS

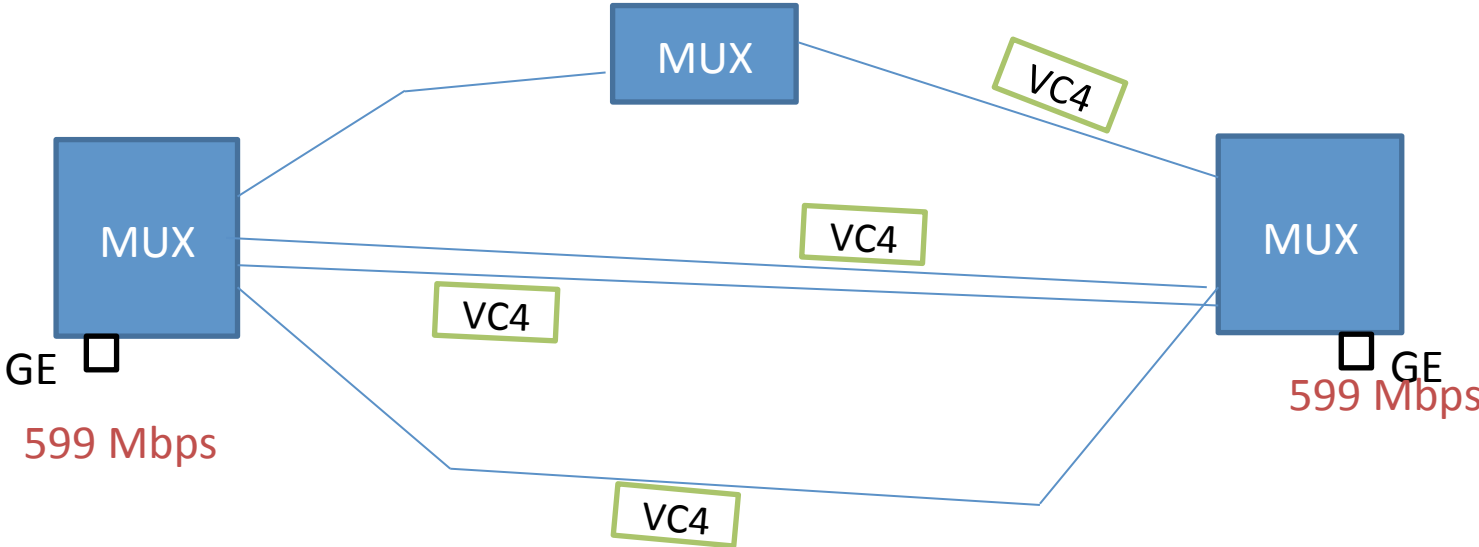
599.04

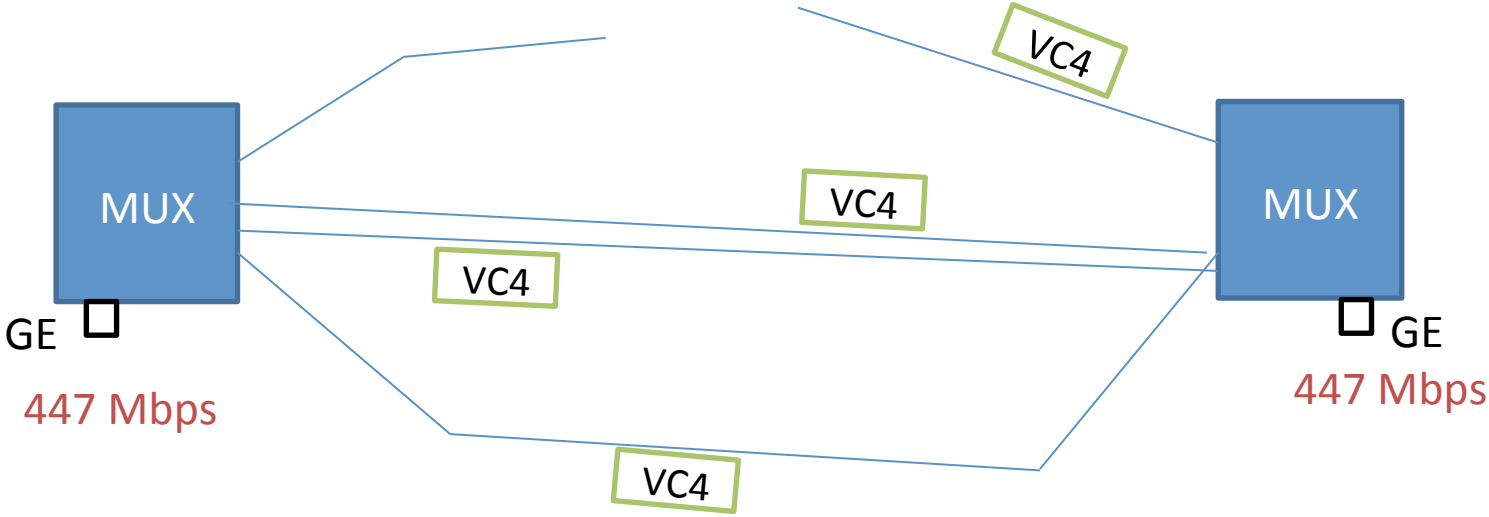


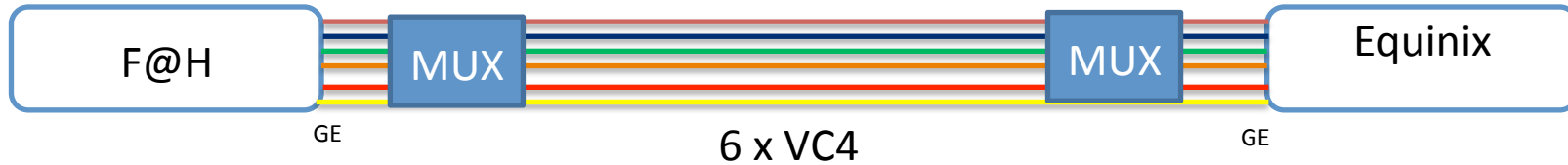
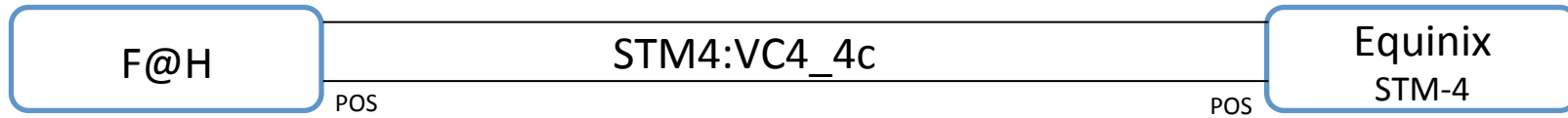
- 1) GFP (GENERIC FRAMING PROTOCOL)
- 2) VCAT (VIRTUAL CONCATENATION)
- 3) LCAS (LINK CAPACITY ADJUSTMENT SCHEME)

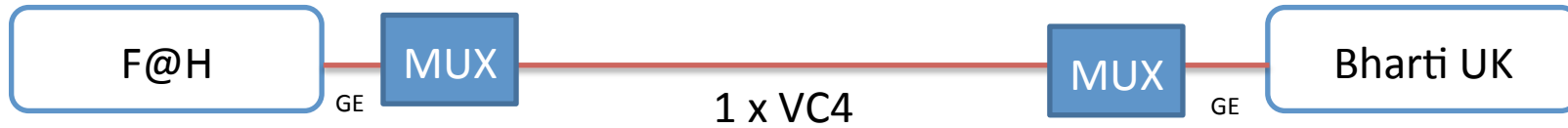
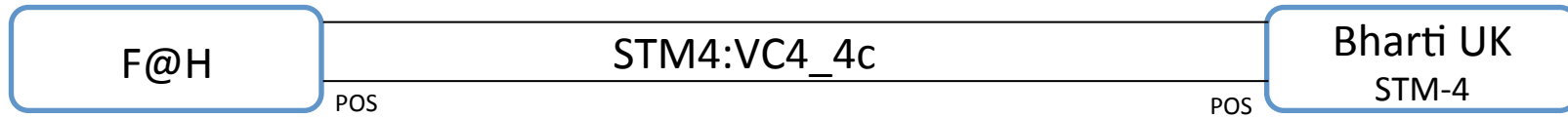




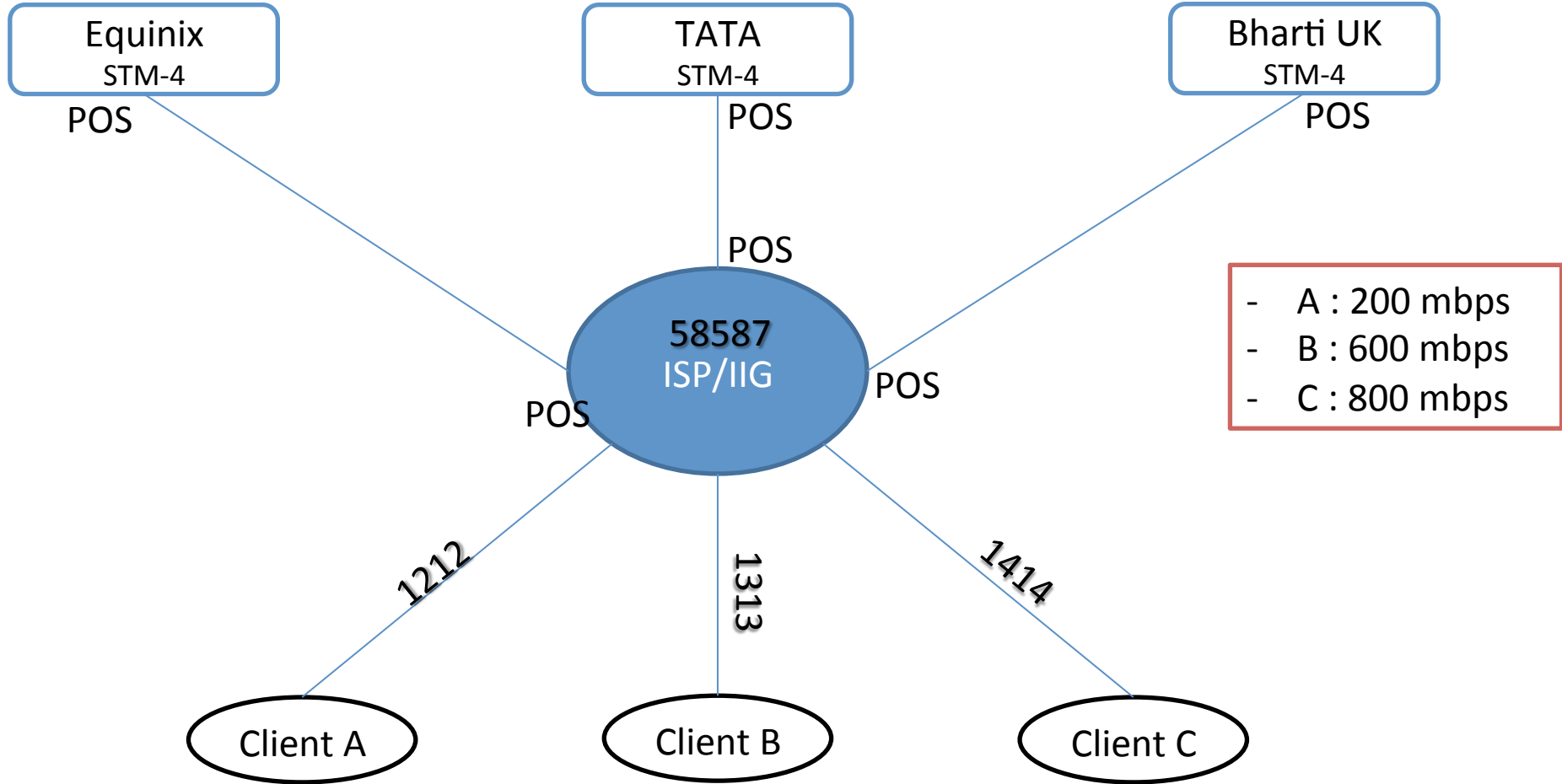


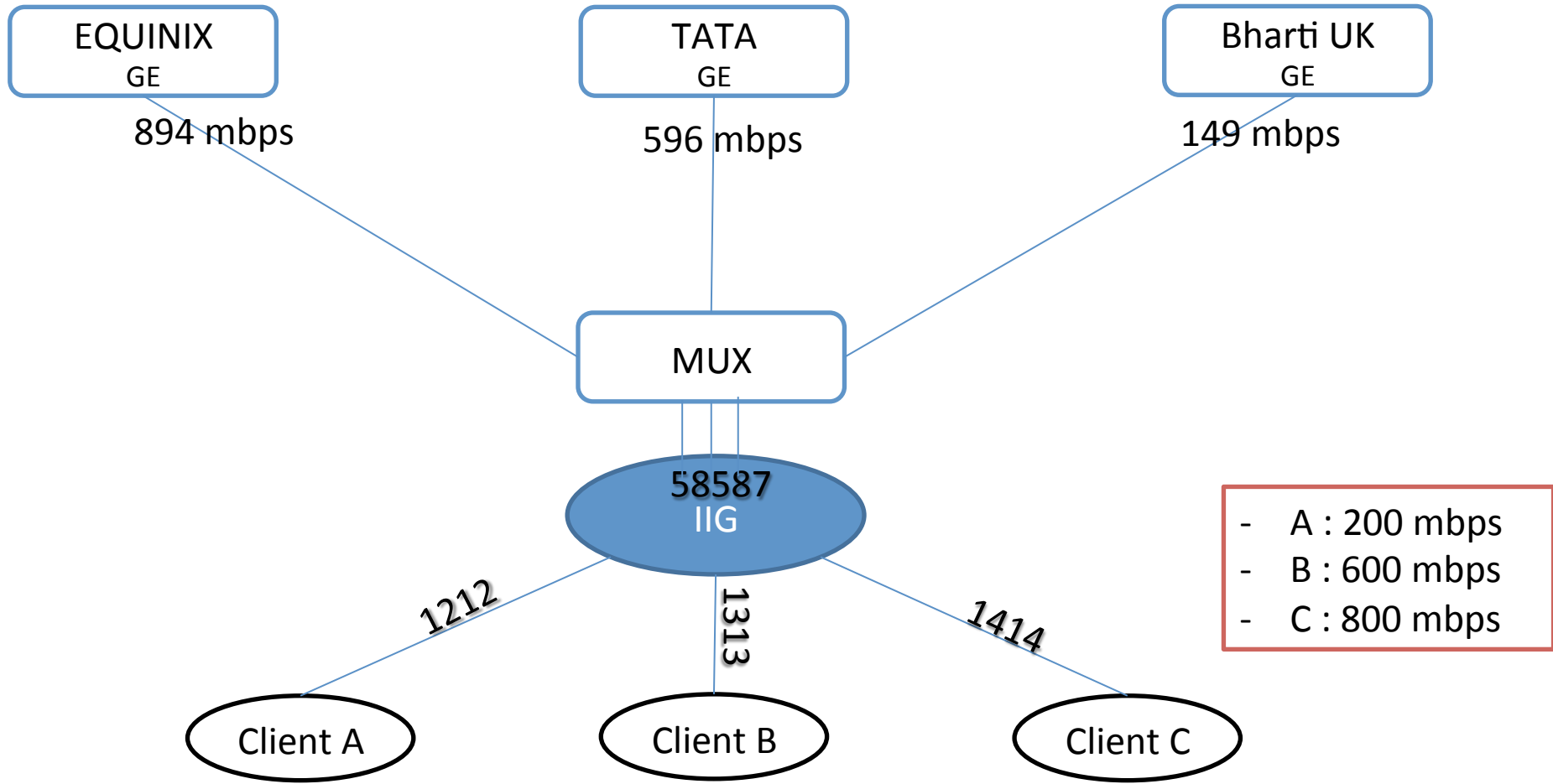






Congestion



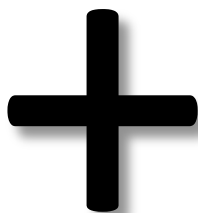
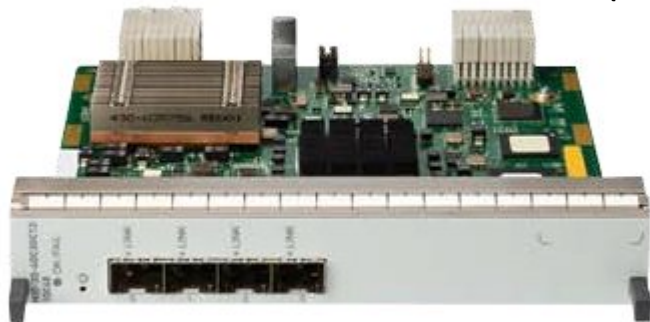


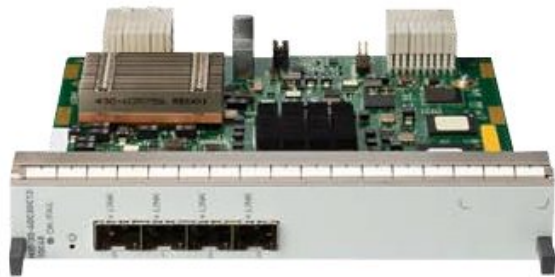
- Peering Cost :
 - Equinix Co-location Charge
 - Equinix IX Peering Charge
- IP Transit Cost : Almost the Same as Peering Cost

How can we justify Cost ?

POS : MIC-3D-4OC3OC12-1OC48 (By Juniper)

Description : Low density multirate MIC, 4 port non-channelized OC3-OC12 / 1 port non-channelized OC48 MIC, (Requires a pluggable SFP optics module)





Ports at the Base :

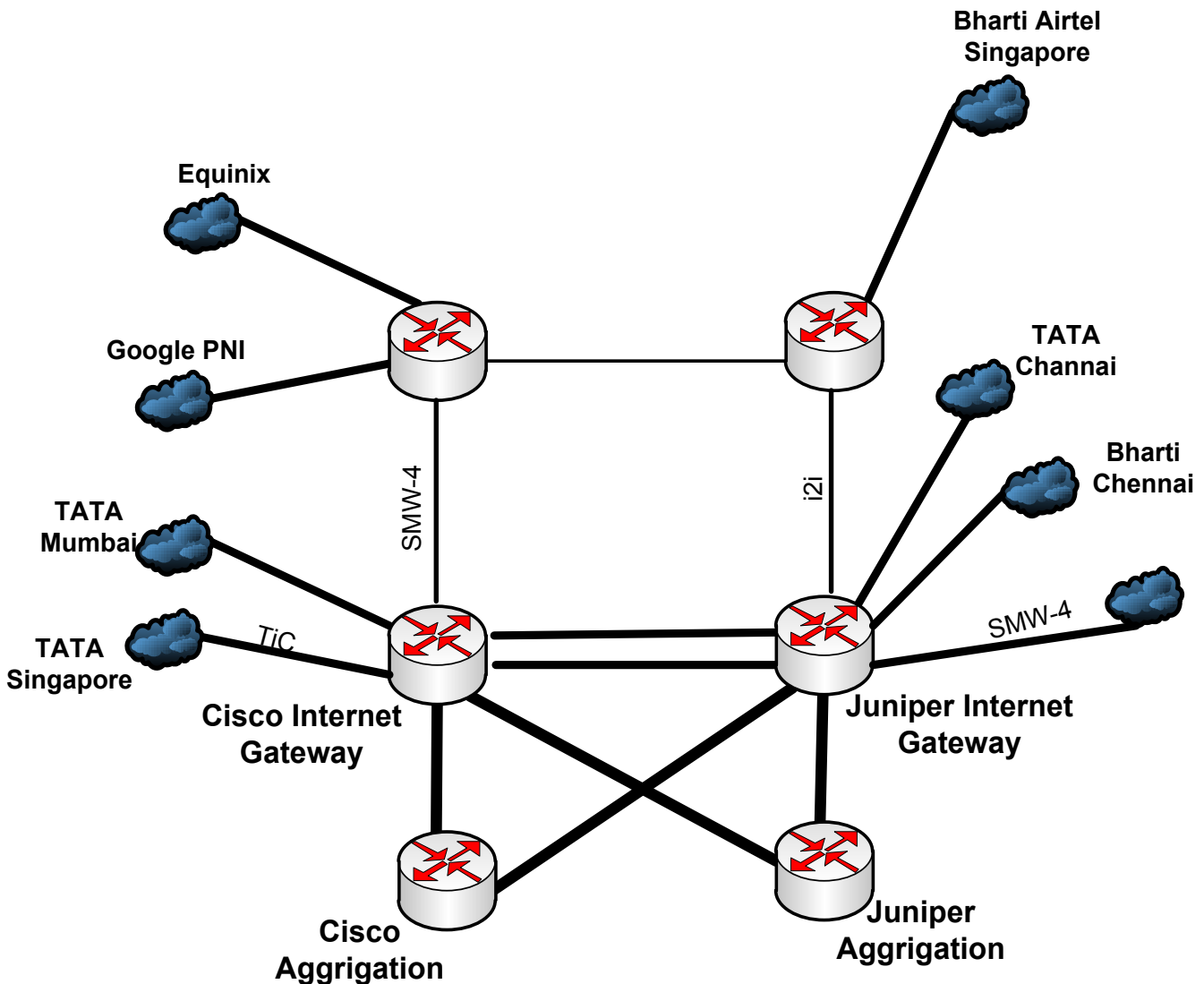
2 x STM-64

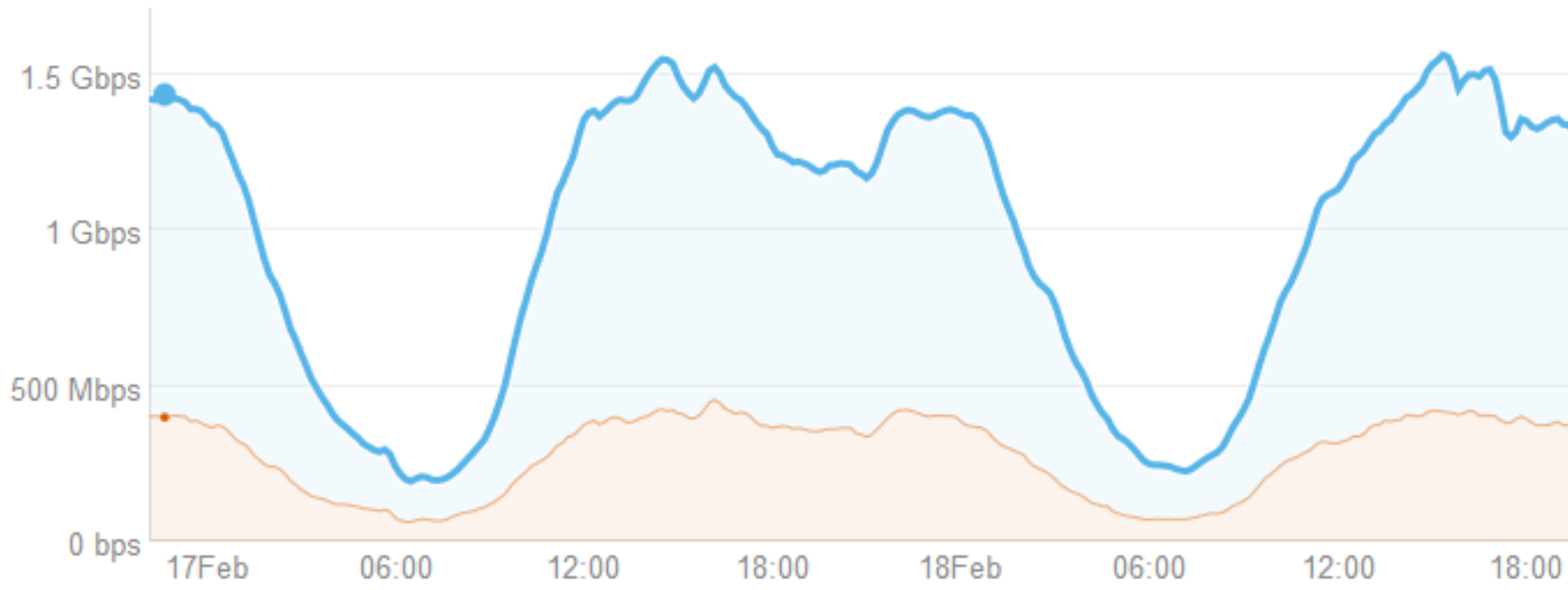
4 x STM-16

4 x GE

- Performance Increase
- Unknown Destination Become Very Near to Us.
- Traffic Engineering is now working evenly at Layer 1.
- Pay what you use in Physical Layer (IPLC).
- Opex Reduced as Singapore is near to Bangladesh and IPLC is costlier to London.
- Capex reduced, as POS cards are really expensive.
- Router is for routing and Transmission Equipment is Transmitting.

Peering – Performance - Price





AS : 58587

OPEN Peering

- EQUINIX Singapore
- Global Switch Singapore
- Mumbai
- Chennai
- London (TeleHouse East)
- Bangladesh



IPv6

Thank You.

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