

AAG Cable cut off Hong Kong Sep 15, 2014

Introduction

It was [reported in the Rakyat post](#) that the America Asia Gateway (AAG) system cable connecting the Vietnamese coastal city of Vung Tau and Hong Kong occurred somewhere near the latter's coast at 11:41pm on Monday, Sept 15. The cable route is shown below (from <http://www.submarinecablemap.com/>).



Asia-America Gateway (AAG) Cable System

[Email link](#)

RFS: November 2009

Cable Length: 20,000 km

Owners: Telekom Malaysia, AT&T, Starhub, PLDT, Communications Authority of Thailand, airtel (Bharti), Telstra, Telkom Indonesia, BT, Eastern Telecom, PT Indonesia Satellite Corp., Telecom New Zealand, Viettel Corporation, Saigon Postal Corporation, Vietnam Telecom International, Brunei International Gateway, BayanTel

URL: <http://www.asia-america-gateway.com>

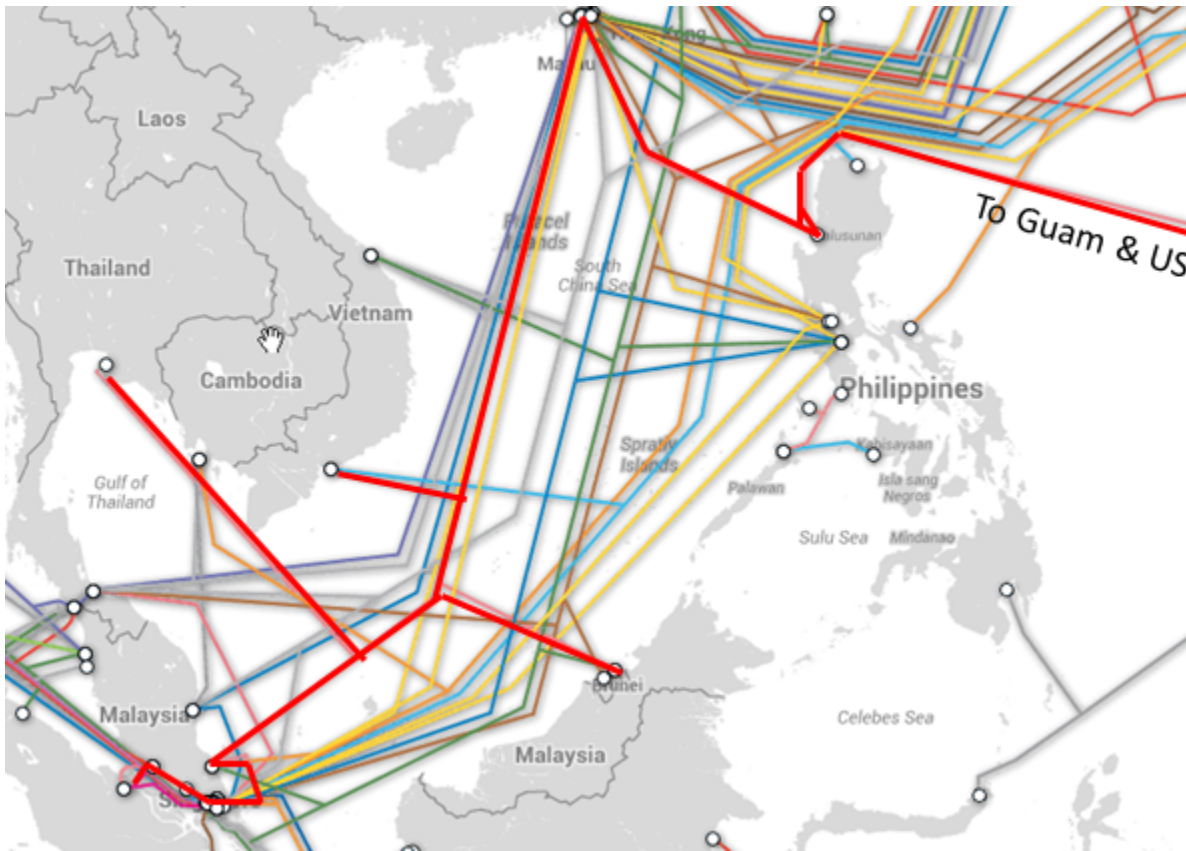
Landing Points

Changi North, Singapore
Currimao, Philippines
Keawaula, Hawaii, United States
Lantau Island, Hong Kong
Mersing, Malaysia
San Luis Obispo, California, United States
Sri Racha, Thailand
Tanguisson Point, Guam
Tungku, Brunei
Vung Tau, Vietnam

Looking at the landing points, the detailed map of S. E. Asia where the AAG cable is highlighted in red below, and noting the cut is between Hong Kong and Vietnam, it might be expected this would impact PingER measurements from the US :

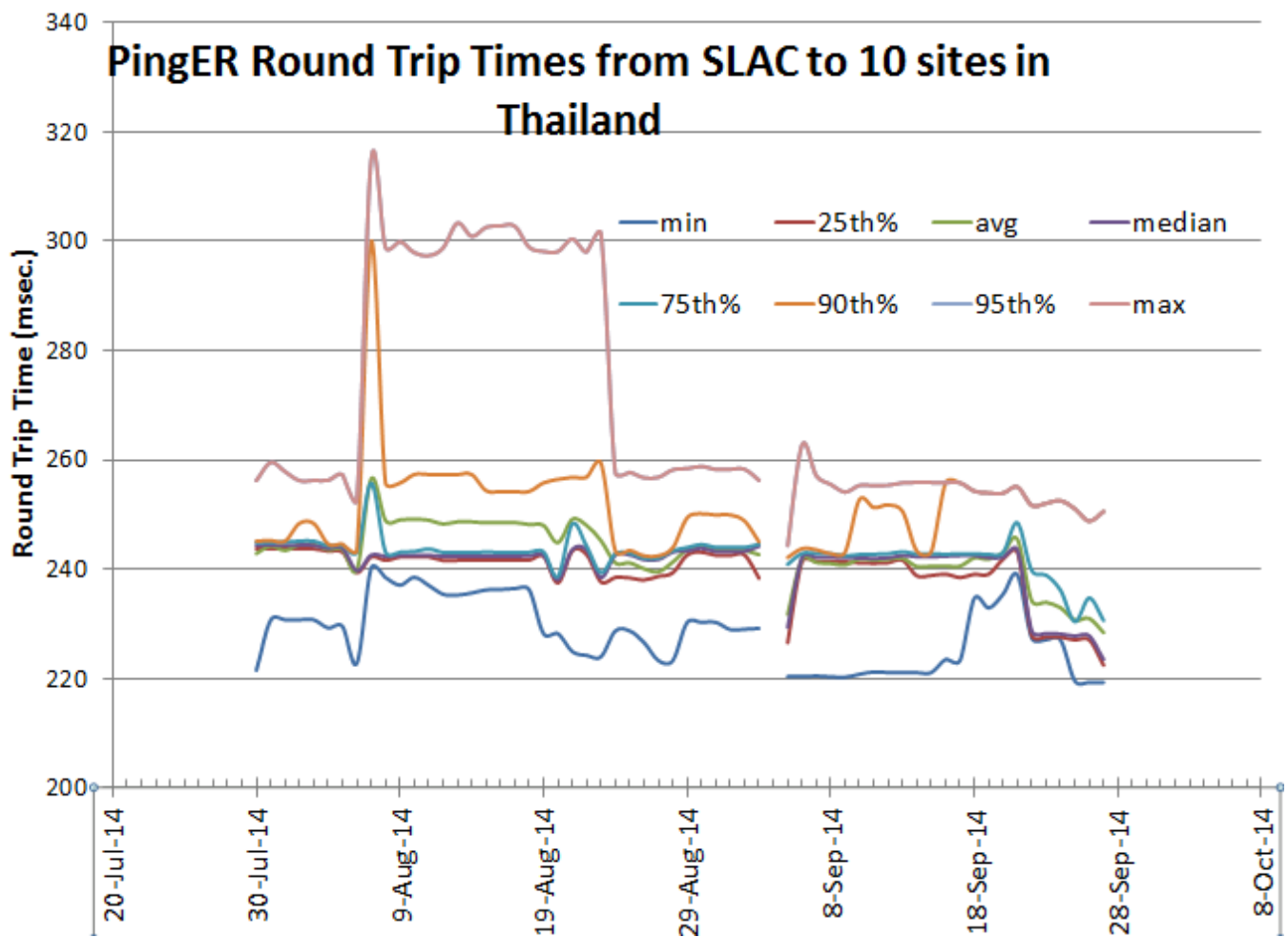
- To Thailand
- To Brunei, though there are two other cables connecting Brunei, so the impact may be limited;
- To Central E. coast Sumatra, though there is another cable connecting to central E coast Sumatra;
- To South Vietnam, though there is another cable connecting to South Vietnam.
- To Northern Phillipines.

There are plenty of cables serving other countries so access to them is unlikely to be affected.

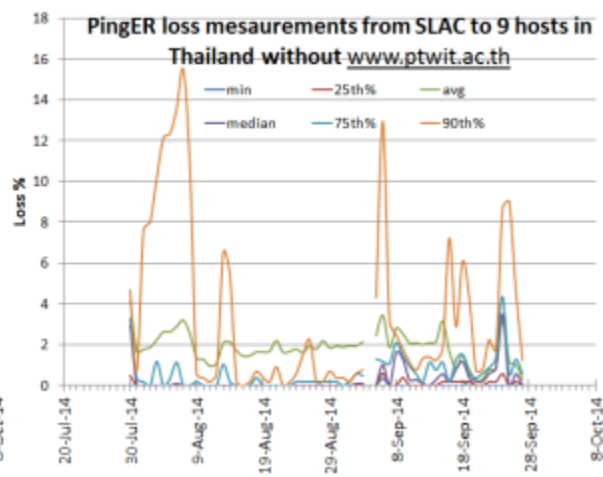


Thailand from US

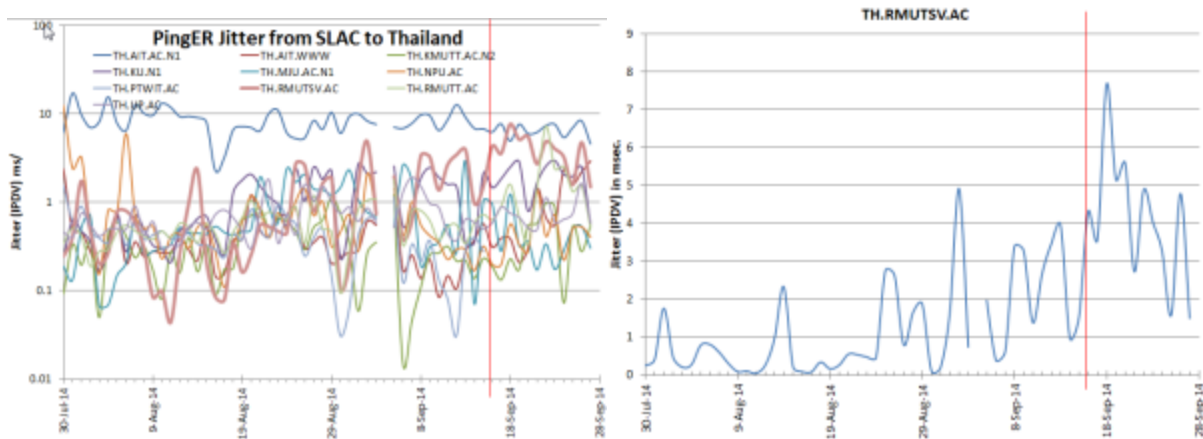
Looking at the graph of RTTs seen from SLAC to Thailand there is little evidence of a marked change in RTTs seen to 10 Thailand hosts.



Similarly evidence is inconclusive for losses, in fact if one looks at the maximum losses it seems to decrease on September 15th. However this is probably misleading since we stopped being able to make measurements to www.ptwit.ac.th on September 15th and this host had consistently the highest losses prior to September 16. Removing this host we get the next graph. If we then focus on the Thailand host (www.rmutsu.ac.th) showing the most impact around September 15th we get the 3rd graph below. Looking at this there is some evidence that there was a change in the jitter of the RTT following September 15th (red line)



Looking at the jitter (measured as the Inter Packet Delay Variability (IPDV) for the Thailand hosts seen from SLAC we get the graph below (rmutsv is identified as the thicker line. We use a log scale to enable visibility of a wider range of values. The graph to the right just show rmutsv but this time on a linear y axis.



Spreadsheet

Traceroutes for rmutsv

These are shown below for September 7 and 14, 2014 (before the cut) for September 16 (after the cut). It is seen that the first two are the same but the second after the cut is different.

2014_09_07 7:0:7 8

1 134.79.197.131 (134.79.197.131) [AS3671] 0.400 ms
2 rtr-core1-p2p-serv01-01.slac.stanford.edu (134.79.253.249) [AS3671] 0.353 ms
3 rtr-fwcore1-trust-p2p-core1.slac.stanford.edu (134.79.254.134) [AS3671] 0.695 ms
4 rtr-core1-p2p-fwcore1-untrust.slac.stanford.edu (134.79.254.137) [AS3671] 0.827 ms
5 rtr-border1-p2p-core2.slac.stanford.edu (134.79.252.137) [AS3671] 1.106 ms
6 slac-mr2-p2p-rtr-border2.slac.stanford.edu (192.68.191.249) [AS3671] 0.880 ms
7 *
8 eqxsjrt1-ip-a-sunncr5.es.net (134.55.38.146) [AS293] 2.012 ms #ESnet
9 198.129.44.54 (198.129.44.54) [AS292] 39.607 ms #ESnet
10 64.86.142.42 (64.86.142.42) [AS6453] 2.092 ms #TATA COMMUNICATIONS (AMERICA) INC,US

11 61.19.9.177 (61.19.9.177) [AS4651/AS3549] 295.621 ms #Level 3 Communications, Inc.,US

12 61.19.14.137 (61.19.14.137) [AS4651/AS3549] 293.740 ms
13 61.19.14.133 (61.19.14.133) [AS4651/AS3549] 293.777 ms
14 61.19.7.38 (61.19.7.38) [AS4651/AS3549] 297.429 ms
15 122.155.224.18 (122.155.224.18) [as4651] 233.785 ms #The Communications Authority of Thailand(CAT),TH

16 202.28.227.189 (202.28.227.189) [AS4621] 252.125 ms #UNINET-TH,TH
17 202.28.221.138 (202.28.221.138) [AS4621] 249.744 ms
18 203.158.177.166 (203.158.177.166) [AS45575] 250.602 ms #Rajamangala University of Technology Srivijaya,TH

2014_09_14 7:0:6 6

1 rtr-servcore1-serv01-webserv.slac.stanford.edu (134.79.197.130) [AS3671] 0.423 ms
2 rtr-core1-p2p-serv01-01.slac.stanford.edu (134.79.253.249) [AS3671] 0.360 ms
3 rtr-fwcore2-trust-p2p-core2.slac.stanford.edu (134.79.254.146) [AS3671] 0.758 ms
4 rtr-core2-p2p-fwcore2-untrust.slac.stanford.edu (134.79.254.149) [AS3671] 0.954 ms
5 rtr-border2-p2p-core1.slac.stanford.edu (134.79.252.141) [AS3671] 1.169 ms
6 slac-mr2-p2p-rtr-border1.slac.stanford.edu (192.68.191.245) [AS3671] 0.869 ms
7 *
8 eqxsjrt1-ip-a-sunncr5.es.net (134.55.38.146) [AS293] 1.973 ms #ESnet
9 198.129.44.54 (198.129.44.54) [AS292] 2.100 ms #ESnet
10 64.86.142.42 (64.86.142.42) [AS6453] 2.117 ms #TATA COMMUNICATIONS (AMERICA) INC,US
11 61.19.9.177 (61.19.9.177) [AS4651/AS3549] 326.112 ms
12 61.19.14.137 (61.19.14.137) [AS4651/AS3549] 322.190 ms
13 61.19.14.149 (61.19.14.149) [AS4651/AS3549] 322.243 ms
14 61.19.7.50 (61.19.7.50) [AS4651/AS3549] 323.341 ms
15 122.155.224.18 (122.155.224.18) [as4651] 234.260 ms
16 202.28.227.189 (202.28.227.189) [AS4621] 252.961 ms
17 202.28.221.138 (202.28.221.138) [AS4621] 249.876 ms
18 203.158.177.166 (203.158.177.166) [AS45575] 250.939 ms

2014_09_16 7:0:5 6

1 134.79.197.131 (134.79.197.131) [AS3671] 0.420 ms
2 rtr-core1-p2p-serv01-02.slac.stanford.edu (134.79.253.253) [AS3671] 0.352 ms
3 rtr-fwcore2-trust-p2p-core2.slac.stanford.edu (134.79.254.146) [AS3671] 0.697 ms
4 rtr-core2-p2p-fwcore2-untrust.slac.stanford.edu (134.79.254.149) [AS3671] 0.817 ms
5 rtr-border1-p2p-core2.slac.stanford.edu (134.79.252.137) [AS3671] 0.891 ms
6 slac-mr2-p2p-rtr-border1.slac.stanford.edu (192.68.191.245) [AS3671] 0.941 ms
7 *
8 eqxsjrt1-ip-a-sunncr5.es.net (134.55.38.146) [AS293] 2.150 ms #ESnet
9 198.129.44.54 (198.129.44.54) [AS292] 2.183 ms #ESnet
10 if-1-2.tcore1.SQN-San-Jose.as6453.net (63.243.205.1) [AS6453] 204.864 ms ##TATA COMMUNICATIONS (AMERICA) INC,US
11 if-9-2.tcore1.TV2-Tokyo.as6453.net (180.87.180.18) [*] 237.657 ms #TATA COMMUNICATIONS (AMERICA) INC,US
12 if-7-2.tcore2.SVW-Singapore.as6453.net (180.87.15.25) [*] 177.645 ms #TATA COMMUNICATIONS (AMERICA) INC,US
13 if-6-2.tcore1.SVW-Singapore.as6453.net (180.87.12.109) [*] 223.804 ms #TATA COMMUNICATIONS (AMERICA) INC,US
14 120.29.215.78 (120.29.215.78) [*] 287.524 ms
15 if-20-2.tcore1.SVQ-Singapore.as6453.net (180.87.96.21) [*] 221.140 ms #TATA COMMUNICATIONS (AMERICA) INC,US
16 *
17 61.19.9.157 (61.19.9.157) [AS4651/AS3549] 248.592 ms #Level 3 Communications, Inc.,US

18 122.155.224.18 (122.155.224.18) [as4651] 236.942 ms #The Communications Authority of Thailand(CAT),TH

19 61.19.7.178 (61.19.7.178) [AS4651/AS3549] 233.210 ms #The Communications Authority of Thailand(CAT),TH/Level 3 Communications, Inc.,US

20 202.28.221.138 (202.28.221.138) [AS4621] 263.619 ms #UNINET-TH,TH

21 202.28.227.189 (202.28.227.189) [AS4621] 264.840 ms # UNINET-TH,TH

22 202.28.221.138 (202.28.221.138) [AS4621] 270.862 ms

23 203.158.177.166 (203.158.177.166) [AS45575] 269.236 ms