

Thailand Sites Report

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The 3rd Asia Tier Center Forum Oct 11 - 13, 2017 KISTI Deajeon, South Korea

Sites Status Report

Two Tier 2 sites in Thailand

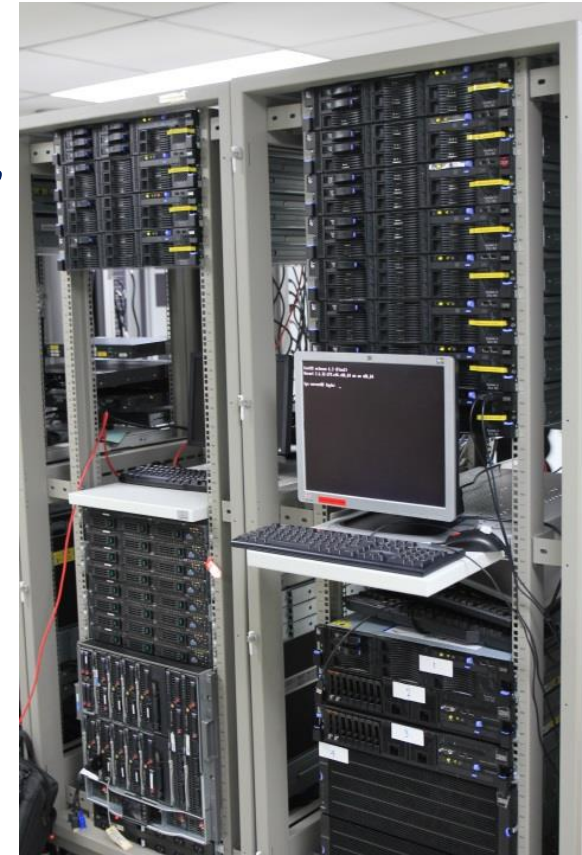
◆ T2-TH-SUT (ALICE)

◆ T2-TH-CUNSTDA (CMS)



T2-TH-SUT

- ◆ A production site for ALICE.
- ◆ Located at Suranaree University of Technology (SUT), Nakhon Ratchasima.
- ◆ 256 CPU Cores (AMD Opteron 2.3GHz) with ~3.5GB/CPU 896GB of RAM on IBM x3755 M3 servers.
- ◆ 100TB on GPFS filesystem for stored ALICE data.
- ◆ A new storage system is under testing for a replacement of the old one





Tier-2 Availability and Reliability Report

ALICE

September 2017

Federation Summary - Sorted by Availability

Color coding: N/A <30% <60% <90% >=90%

Availability Algorithm: @ALICE_CE * @ALICE_VOBOX * all AliEn-SE

Federation	Availability	Reliability	Federation	Availability	Reliability
FR-IN2P3-LPC	100%	100%	TH-Tier2	99%	99%



Tier-2 Availability and Reliability Report

ALICE

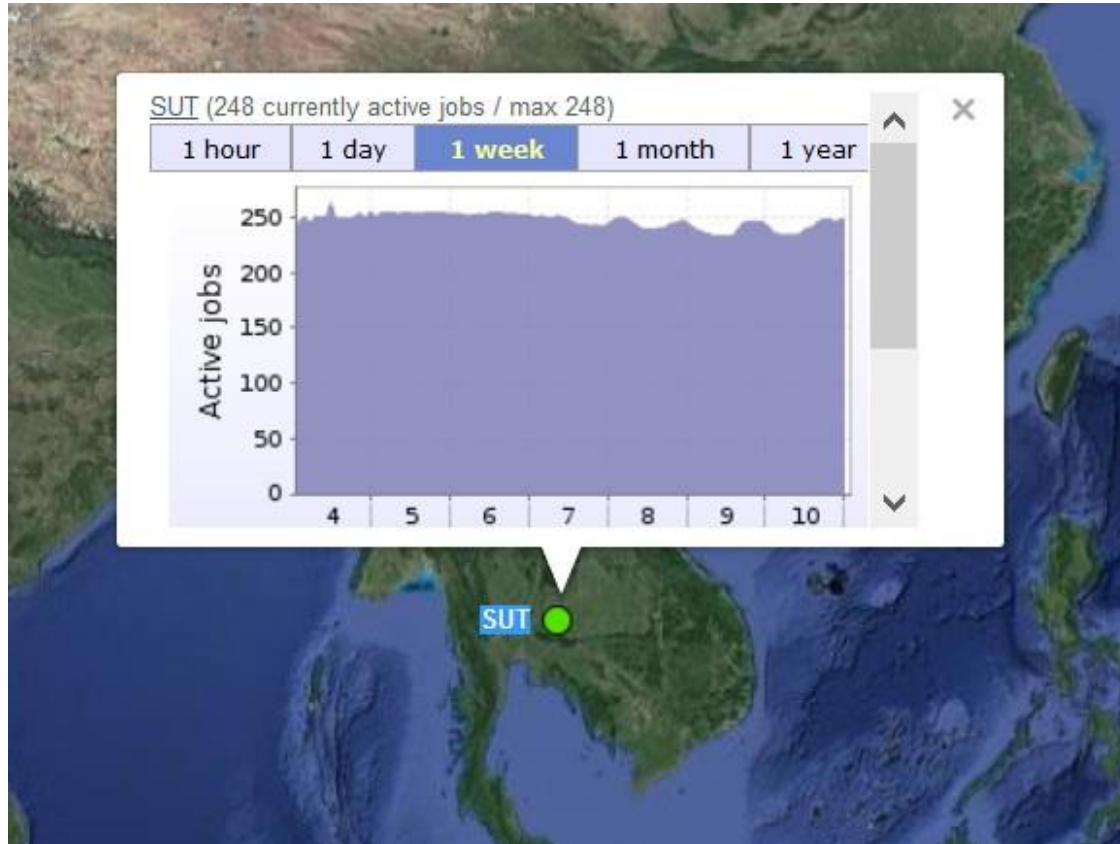
Federation Details

Color coding: N/A <30% <60% <90% >=90%

Availability Algorithm: @ALICE_CE * @ALICE_VOBOX * all AliEn-SE

Federation & Sites	Pledge CPU	Pledge Disk	Availability	Reliability	Unknown	Jun-2017	Availability History	
							Jul-2017	Aug-2017
TH-Tier2	1400	100						
SUT			99%	99%	0%	100%	100%	97%

Current Jobs Running



Active jobs in SUT at last 6 months



Report on ALICE sites activity (01.09.2017 - 30.09.2017)

ALICE reports

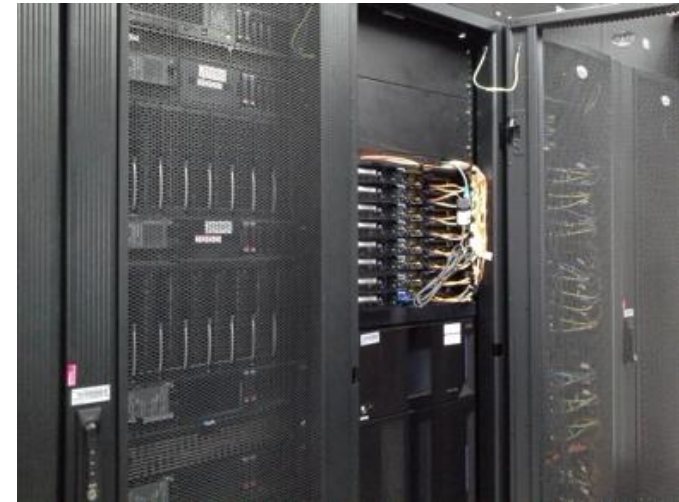
Report on ALICE sites' activity (01.09.2017 - 30.09.2017)											
			Pledged	Delivered		Occupancy	Missing KSI2K	Efficiency	Job statistics		
Site	Group	Tier	KSI2K	CPU	Wall	Wall/Pledged	Pledged - Wall	CPU/Wall	Assigned	Completed	Efficiency
103. SUT	Thailand	T2	-	573.4	614.7	-	-	93.28%	8929	1531	17.15%

very low in the last two months



T2-TH-CUNSTDA

- ◆ A production site for CMS.
- ◆ Located at NECTEC, Now it has a plan to move to CU
- ◆ 260 CPU Cores (Intel Xeon 2.0GHz) with ~800GB of RAM on IBM iDataPlex Server.
- ◆ 300TB Storage run on GlusterFS.





T2-TH-CUNSTDA



Dr. Norraphat Srimanobhas

T2_TH_CUNSTDA																						
LifeStatus:	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
Site Readiness:	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E		
Maintenance:	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up	Up		
HammerCloud:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
SAM Availability:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
Good T2 links from T1s:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Good T2 links to T1s:	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Active T2 links from T1s:	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
Active T2 links to T1s:	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14		
	19	20	21	22	23	24	25	26	27	28	29	30	01	02	03	04	05	06	07	08	09	10
	Sep												Oct									

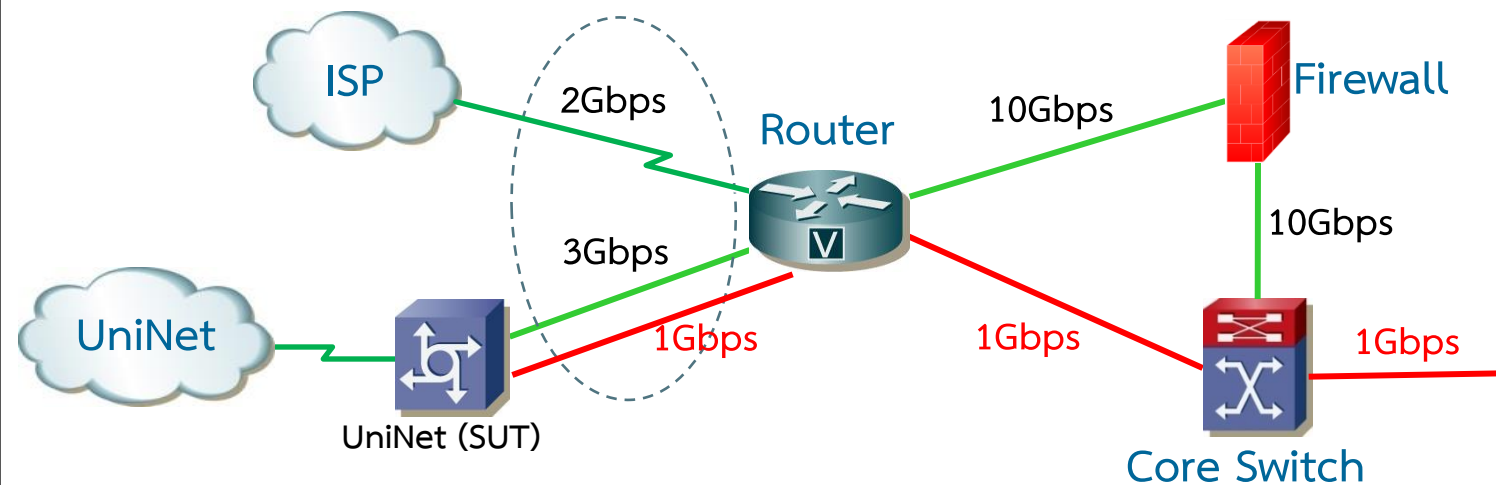
Report made on 2017-10-10 22:38:05 (UTC)

Ref. <https://cms-site-readiness.web.cern.ch/cms-site-readiness/SiteReadiness/HTML/SiteReadinessReport.html>

Network Status

Network topology at SUT

AS number (ASN) of SUT 55545



ALICE resource
at Data Center

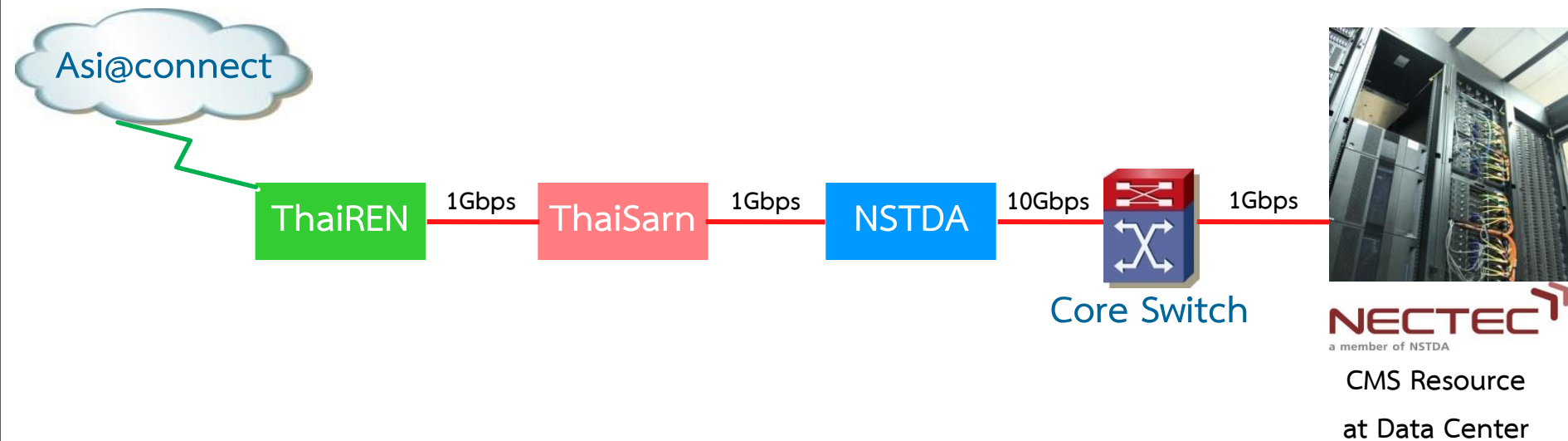
IPV4 : 202.28.43.190/255.255.255.192

IPV6 : 2001:3c8:c301:17::1/64

University Link —

ALICE Dedicare Link —

Network topology for CMS at NECTEC



- ◆ Now it has a plan to move to CU.

Network Infrastructure Update

28/09/2017

State-owned company in Thailand



- **CAT Telecom Public Company Limited**



- **Telecom of Thailand**

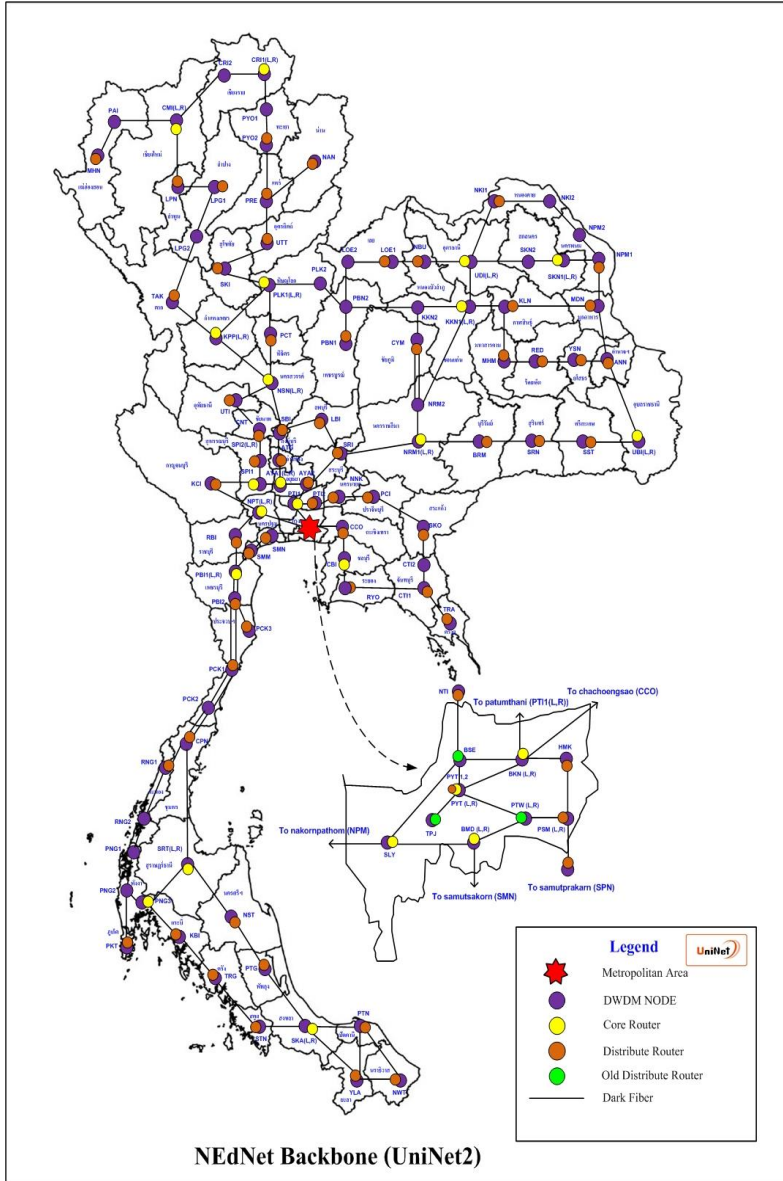
Government Network Organization



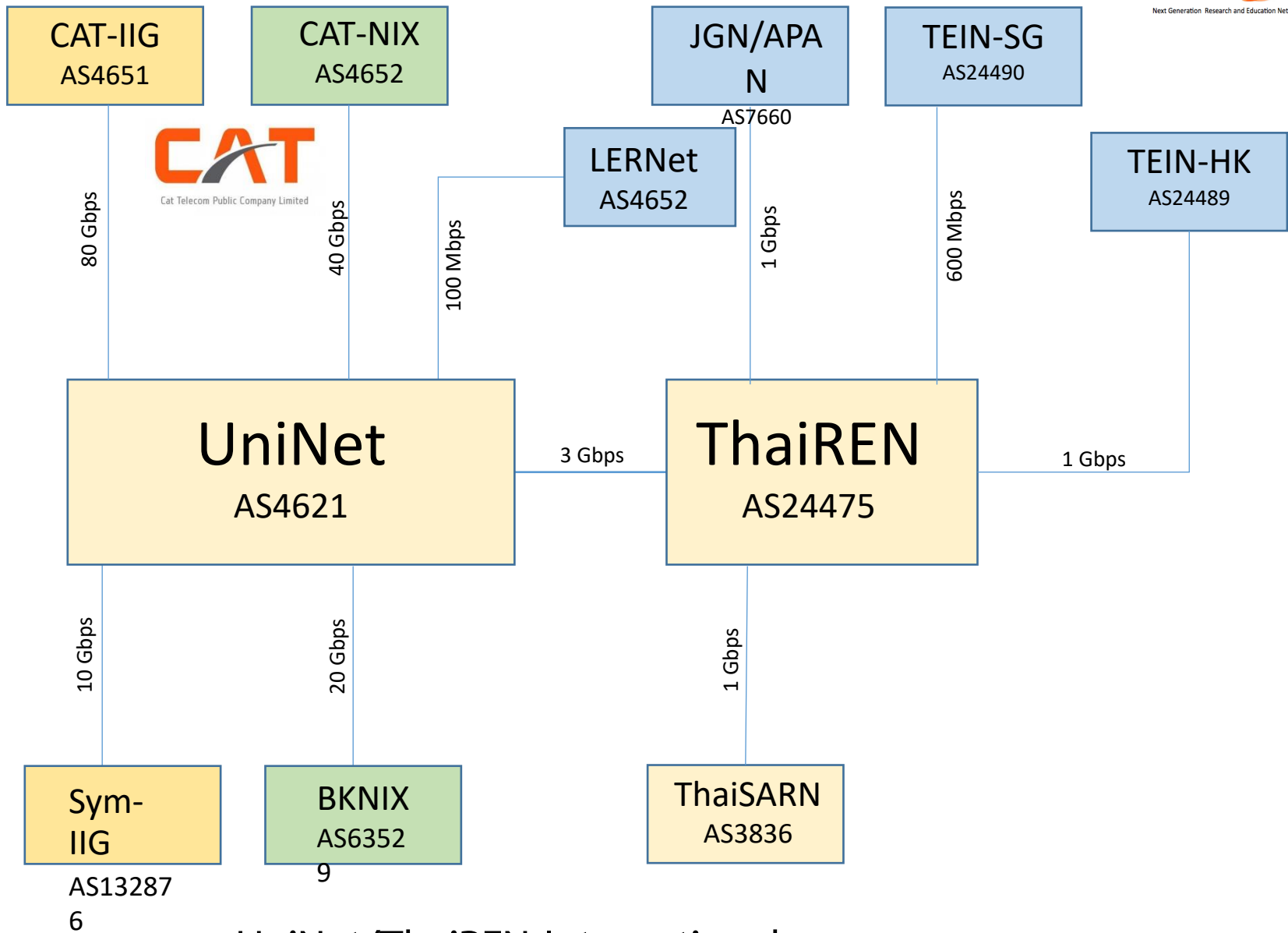
- **Thailand Education and Research Network (UniNet)**



- **Thailand Research Education Network (ThaiREN)**



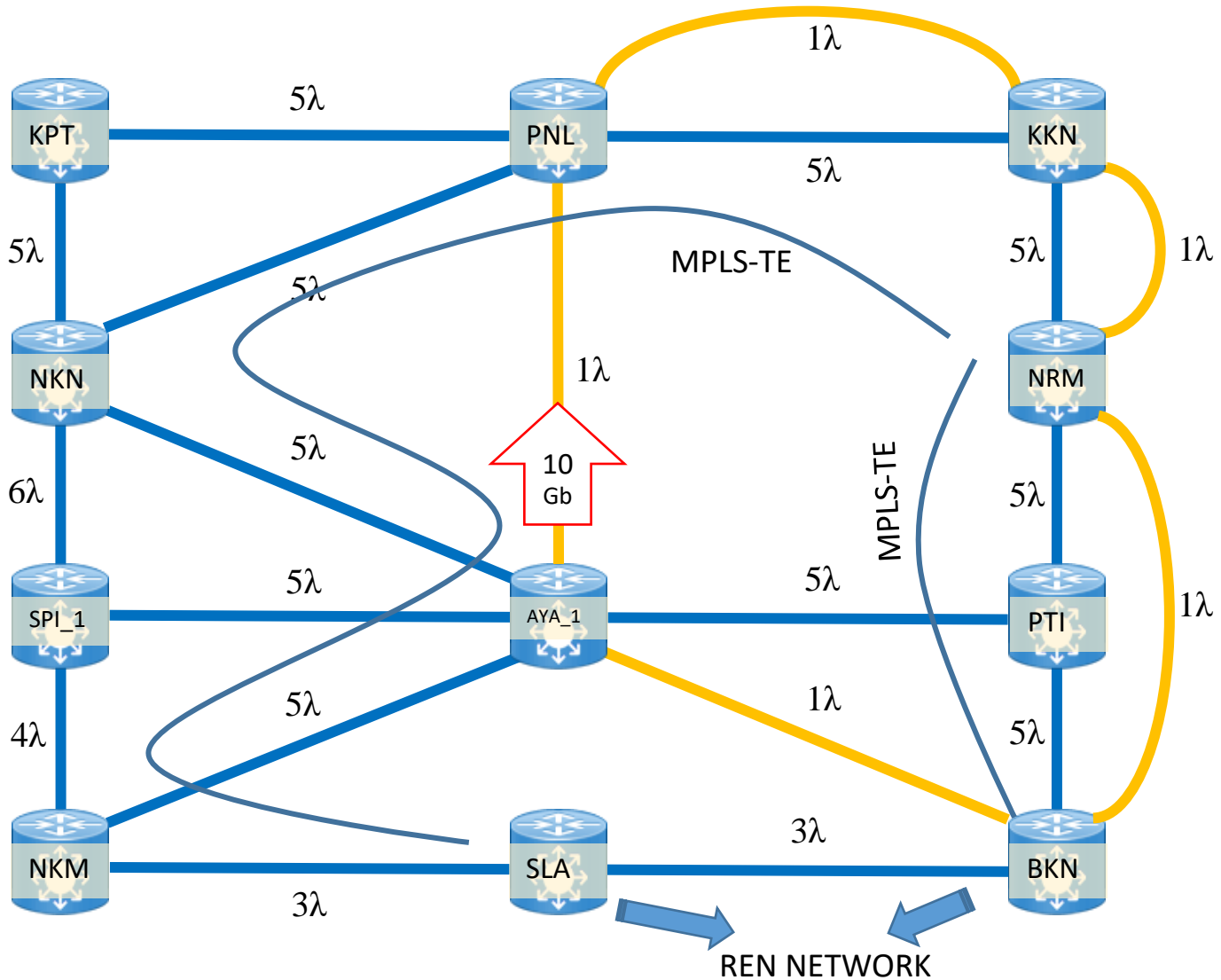
- Main Backbone
 - bandwidth 50 Gbps
- Distribute Backbone
 - bandwidth 10-20 Gbps
- Support IPv4/IPv6 Dual Stack and Native
- Support MPLS (L3 VRF)
- Support Traffic Engineering
- Support QoS

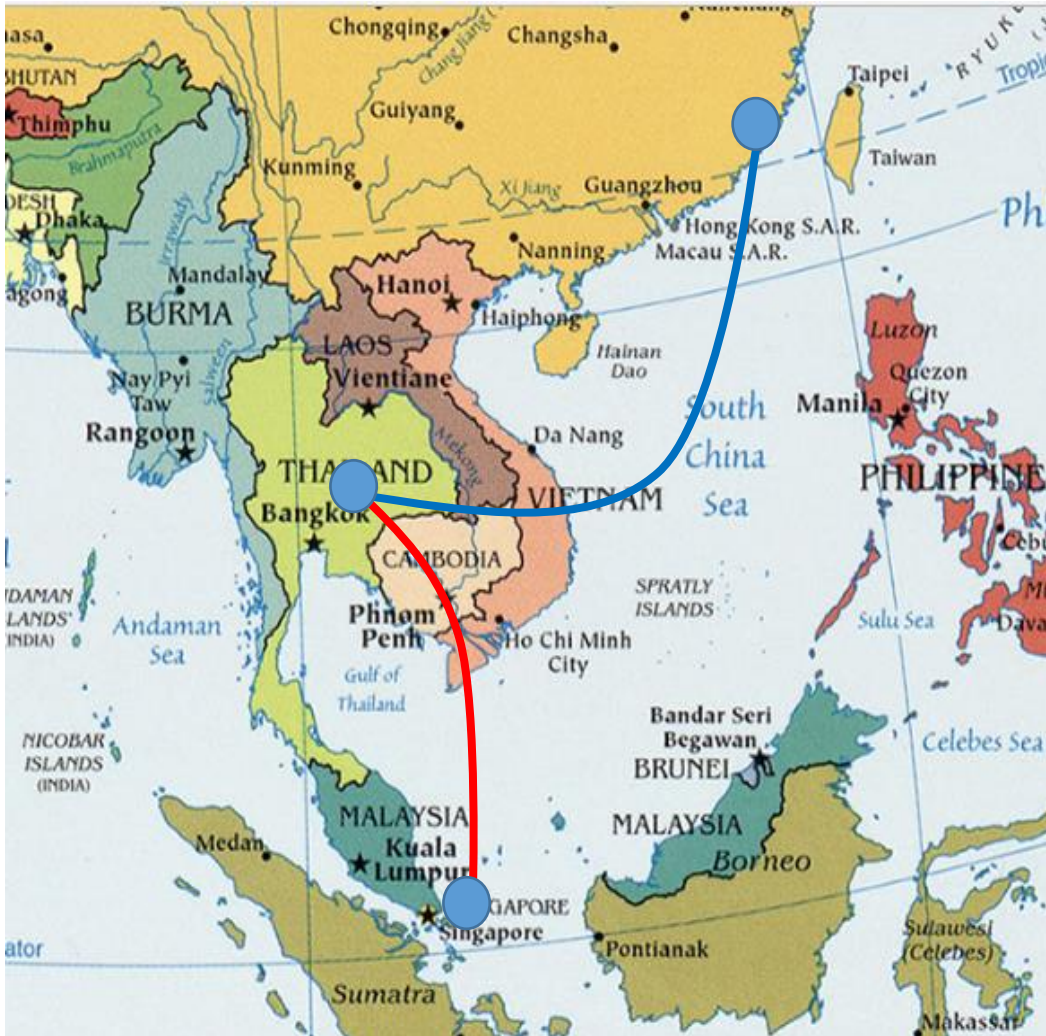


UniNet/ThaiREN International Peering

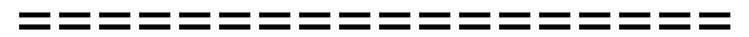
www.uni.net.th , www.ThaiREN.net.th

Traffic flow with MPLS-TE





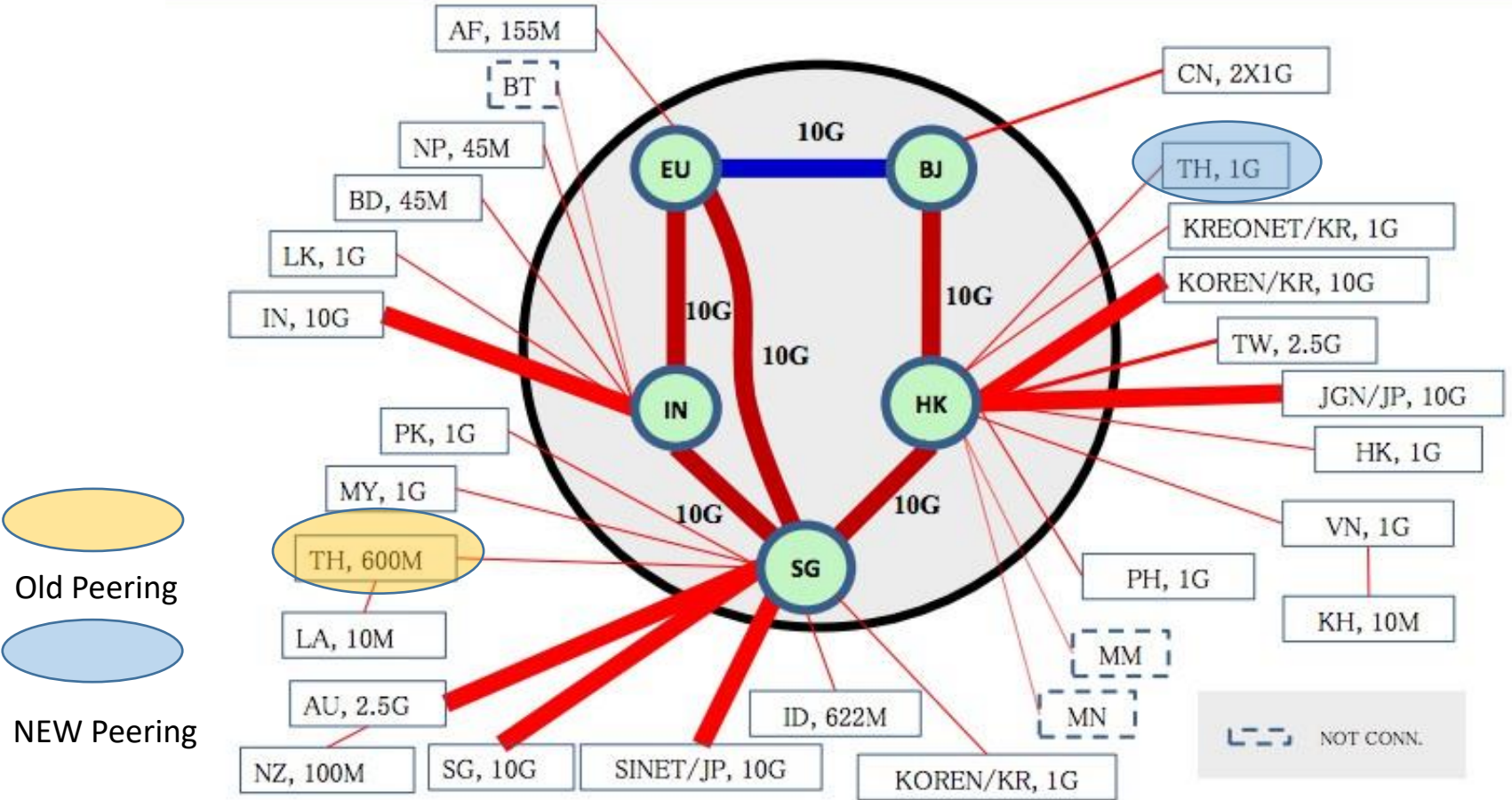
- Link ThaiREN to Singapore POP
Bandwidth : 622 Mbps
- Link ThaiREN Hong Kong POP
Bandwidth : 1000 Mbps



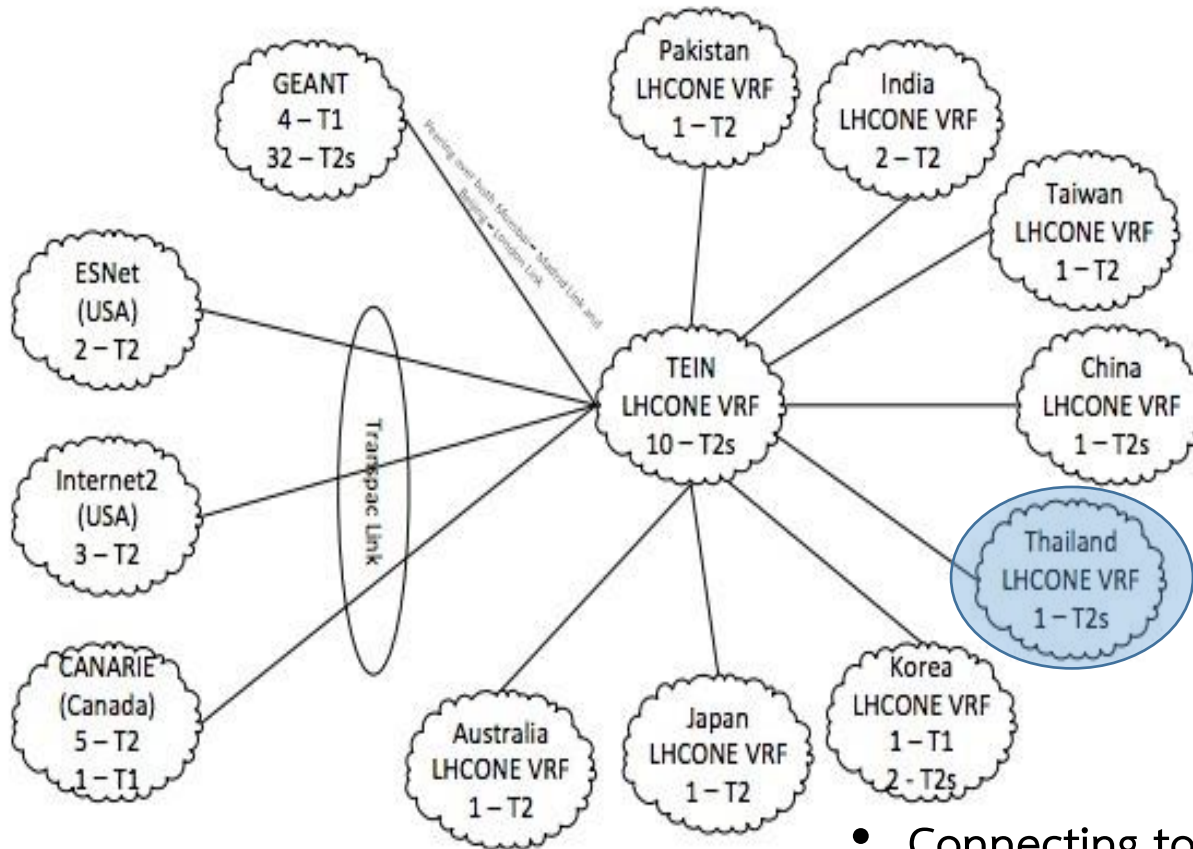
Connectivity LHCONE

- L3-VPN @ Singapore POP
- L3-VPN @ Hong Kong POP

1. SUMMARY - Asi@Connect (DEC. 2016)



- Common platform for Network Service (LHCONE)



- Connecting to LHCONE with
 - L3-VPN @ Singapore POP
 - L3-VPN @ Hong Kong POP

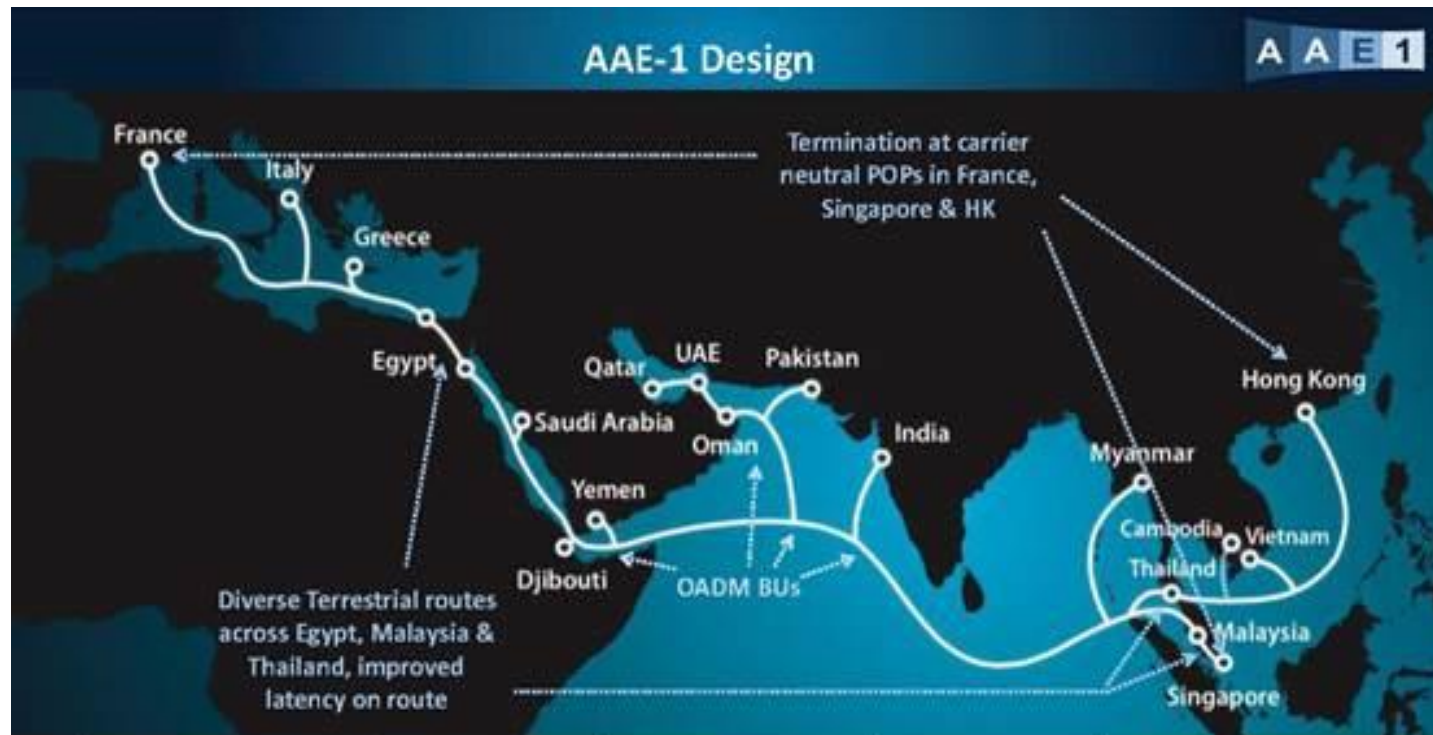
PerfsonNAR Performance



SOURCE	DESTINATION	THROUGHPUT	LATENCY (MS)	LOSS
perfsonar.uni.net.th 202.28.194.4 Details	nms1-10g.jp.apan.net 203.181.249.186	→ 401 Mbps ← 324 Mbps	→ n/a ← n/a	→ n/a ← n/a
perfsonar.uni.net.th 202.28.194.4 Details Traceroute	203.158.118.200	→ 636 Mbps ← 588 Mbps	→ -0.412 ← 6.00	→ 1.444% ← 0.032%
perfsonar.uni.net.th 202.28.194.4 Details	14.139.5.218	→ 413 Mbps ← 369 Mbps	→ -27.4 ← 119	→ 0.025% ← 0.023%
perfsonar.uni.net.th 202.28.194.4 Details	202.28.231.123	→ 93.7 Mbps ← 54.6 Mbps	→ 219 ← 4.67	→ 0.174% ← 0.204%
perfsonar.uni.net.th 202.28.194.4 Details	203.30.39.13	→ 485 Mbps ← 510 Mbps	→ n/a ← n/a	→ n/a ← n/a
perfsonar.uni.net.th 202.28.194.4 Details	203.185.93.2	→ 871 Mbps ← 868 Mbps	→ 1.79 ← 5.35	→ 0.933% ← 0.013%
perfsonar.uni.net.th 202.28.194.4 Details	202.179.252.18	→ 447 Mbps ← 472 Mbps	→ 13.8 ← 20.5	→ 0.029% ← 0.011%
perfsonar.uni.net.th 202.28.194.4 Details	203.80.20.66	→ 334 Mbps ← 393 Mbps	→ 16.8 ← 23.6	→ 7.393% ← 5.994%
202.28.194.4 Details	202.179.246.18	→ 312 Mbps ← 667 Mbps	→ 218 ← 29.1	→ 0.390% ← 0.000%
202.28.194.4 Details	ps1.itsc.cuhk.edu.hk 137.189.192.25	→ 278 Mbps ← n/a	→ 29.7 ← 29.4	→ 0.006% ← 0.199%
2001:3c8:1501:298::1501:4 Details	ps1.itsc.cuhk.edu.hk 2405:3000:3:c01:8137:189:192:25	→ 306 Mbps ← 143 Mbps	→ n/a ← n/a	→ n/a ← n/a
perfsonar.uni.net.th 202.28.194.4 Details	p-1p1.test.seat.transpac.org 192.203.115.2	→ 233 Mbps ← 287 Mbps	→ 93.6 ← 104	→ 0.014% ← 0.120%
perfsonar.uni.net.th 202.28.194.4 Details	perfsonar-m1.twaren.net 211.79.61.148	→ 341 Mbps ← 301 Mbps	→ 41.9 ← 69.6	→ 0.006% ← 0.100%
perfsonar.uni.net.th 202.28.194.4 Details	ps-asti.pregi.net 202.90.158.247	→ 137 Mbps ← 35.6 Mbps	→ 46.7 ← 62.5	→ 0.151% ← 0.193%
perfsonar.uni.net.th 202.28.194.4 Details	psnode1.it.chula.ac.th 161.200.254.1	→ 590 Mbps ← 919 Mbps	→ -3.55 ← 4.99	→ 0.003% ← 0.000%

Future Network Infrastructure of Thailand

1) **Asia-Africa-Europe 1 (AAE-1)** is a 25,000km submarine cable from South East Asia to Europe across Egypt, connecting Hong Kong, Vietnam, Cambodia, Malaysia, Singapore, Thailand, India, Pakistan, Oman, UAE, Qatar, Yemen, Djibouti, Saudi Arabia, Egypt, Greece, Italy and France.



25.000 Km.

Submarine cable

4/5

Number of Fiber Pair

100Gbps

Wavelength Technology

80 λ

Initial Design WL per FP

40 Tbps

Initial System Design Capacity

AAE-1 cable system has been finally launched for service as of June 23rd, 2017

Crossing of the Thailand peninsula to minimize the latency for the landing sites situated east of Thailand.

Main party in Thailand is

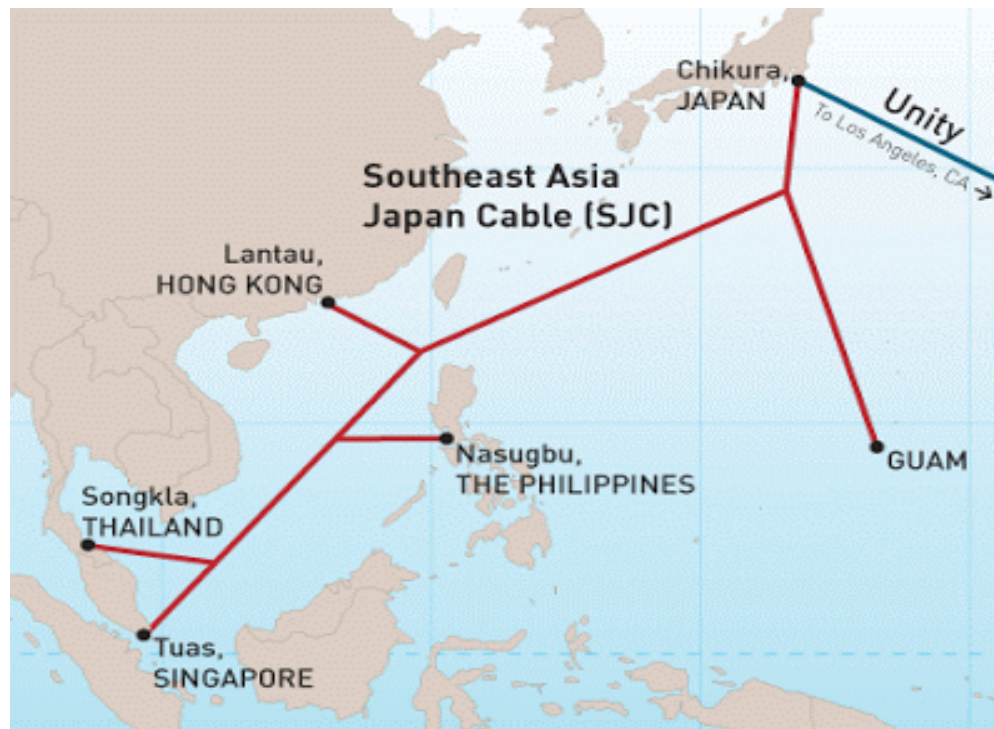


2) The Southeast Asia-Middle East-Western Europe (SEA-ME-WE 5) submarine cable system has been successfully connected to its landing station at Catania in Sicily total 20,000 km



3) Southeast Asia - Japan Cable System (SJC)

Cable length: 8,900km Chikura, Japan ; Chung Hom Kok, Hong Kong ; Nasugbu, Philippines ; Shantou, China ; Songkhla, Thailand ; Telisai, Brunei ; Tuas, Singapore



Southeast-Asia Japan Cable (SJC) Plan (Source/Courtesy Telegeography)
<http://soft-brain.blogspot.com/2008/09/>

Q&A