



# TEIN3 Annual NOC Workshop NOC Country Reports and Discussions

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National ICT Initiative



# Agenda

- 1. Introduction**
- 2. Infrastructure**
- 3. NMS tools**
- 4. MYREN Community**
- 5. Technical Activities to be Completed**

# Introduction



## Examples of other regional and global NREN's

Asia Pacific ← **TEIN3** → **GÉANT** Europe

**Others**

**USA**

**INTERNET**

**BANGLADESH RESEARCH AND EDUCATION NETWORK**

**PERN**

**ERNET India**

**LEARN**  
Connecting the Nation since 1990

**KAREN**

**MSC MALAYSIA**  
National ICT Initiative

# Introduction

## MYREN is...

- Malaysian Research and Education Network
  - a **dedicated** network linking research and education entities throughout Malaysia
  - to provide a networking avenue for universities & research institutes to collaborate locally & globally.
- officially launched in March 2005 under RMK-8 and further expanded under RMK-9
- started with 11 universities and have 88 universities and research organisations by year end
- centered at the MSC Malaysia Innovation Centre in Cyberjaya (the country's first intelligent city)

# Introduction

## Key Players in MYREN...



- **Project Sponsor/Owner**

Ministry of Energy, Water & Communication (MEWC)

➤ March 2005 until June 2009

Ministry of Information, Communication & Culture (MICC)

➤ July 2009 until 2010

Ministry of Higher Education (MoHE)

➤ From Jan 2011 until 2013

Ministry of Education (MoE)

➤ From Jan 2013 – Current

- **Project Manager**

Multimedia Development Corporation  
(MDeC)



# Introduction

***Location: MSC Malaysia Innovation Centre, CYBERJAYA***



## Helpdesk

- 9.00 am to 6.00 pm [OfficeHour]: NOC, Cyberjaya
- 6.00 pm to 9.00 am [After Hour] : Standby Engineer



**One-stop Information Centre**

**+603 831 831 51**

**[helpdesk@myren.net.my](mailto:helpdesk@myren.net.my)**

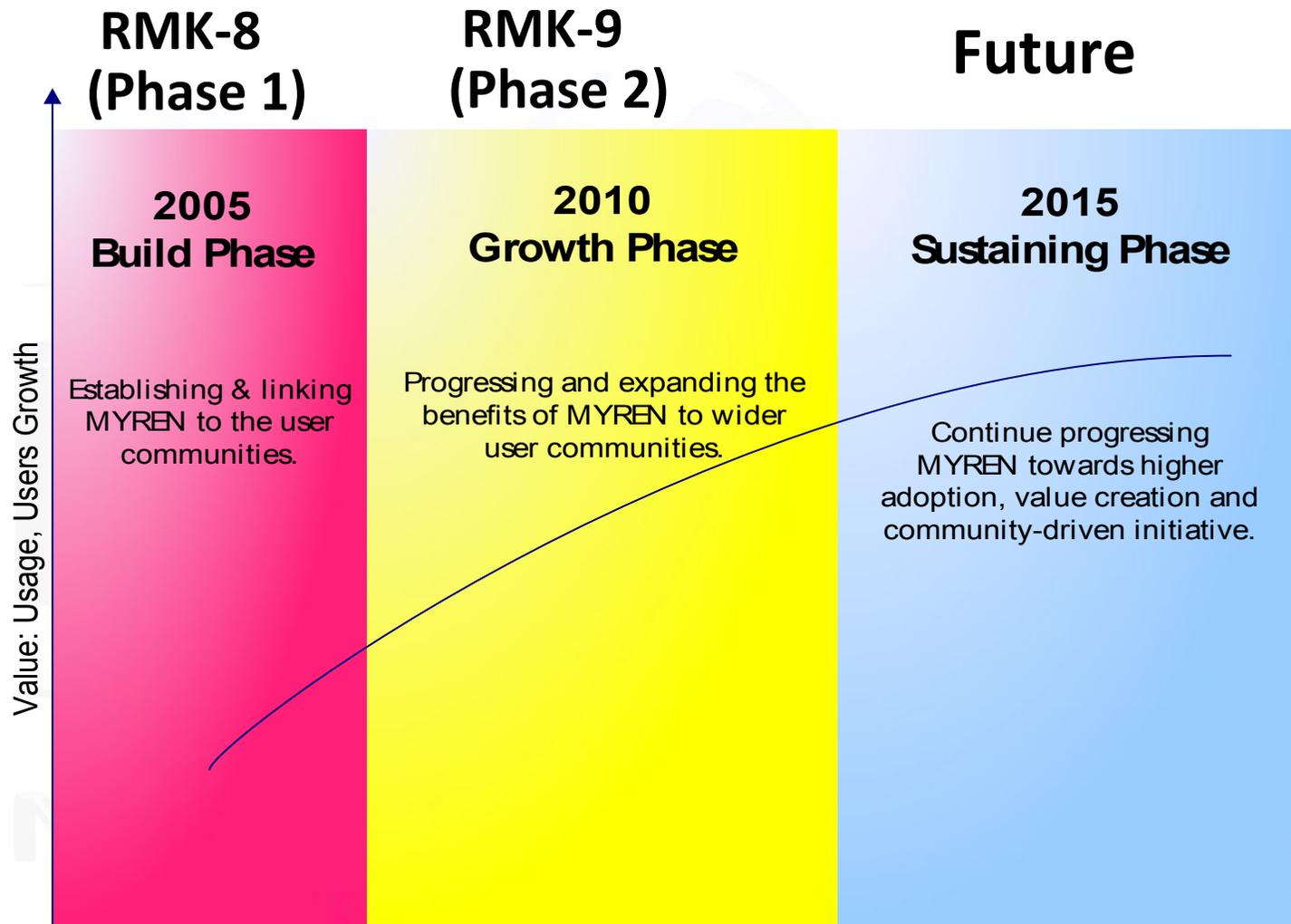


## Services

- Technical support and operations
- Weathermap, Looking Glass, Smokeping, IPv6 Multicast Beacon
- Multipoint video conferencing
- Assist with circuit fault management & restoration based on the 2-tier Fault Escalation Plan

[www.msomalaysia.my](http://www.msomalaysia.my)

# Introduction - Strategic Directions



# Infrastructure – Fact Sheet

- AS 24514
- IPv4 : 203.80.16.0/21, 122.129.120.0/21, 103.17.78.0/24, 103.26.47.0/24, 103.26.74.0/24, 150.129.184.0/22
- IPv6 : 2404:A8::/32
- Dual Stack since 2006
- IPv6 unicast and multicast
- Peer with ->AS 4788 (Commodity)  
-> AS 24490 (R&E)
- 60/88 members are IPv6 ready (Dual-Stack)



# Infrastructure – Fact Sheet

- AS 24514

Start IP	Length	Date	Usage	Assignment status	Reverse DNS	Private	Public
150.129.184.0	/22	2014-06-30	0%		update	<input type="checkbox"/>	<input type="checkbox"/>
103.26.74.0	/23	2013-06-19	100%		update	<input type="checkbox"/>	<input type="checkbox"/>
103.26.47.0	/24	2013-06-19	100%		update	<input type="checkbox"/>	<input type="checkbox"/>
103.17.78.0	/24	2013-02-27	100%		update	<input type="checkbox"/>	<input type="checkbox"/>
122.129.120.0	/21	2010-12-24	99%		update	<input type="checkbox"/>	<input type="checkbox"/>
203.80.16.0	/21	2005-12-23	90%		update	<input type="checkbox"/>	<input type="checkbox"/>

Legend: < 20%    = 20%    = 40%    = 60%    = 80%    > 80%

- 60/88 members are IPv6 ready (Dual-Stack)

# Infrastructure – Fact Sheet

- AS 24514

Start IP	Length	Date	Usage	Assignment status	Reverse DNS	Private	Public
150.129.184.0	/22	2014-06-30	0%		update	<input type="checkbox"/>	<input type="checkbox"/>
103.26.74.0	/23					<input type="checkbox"/>	<input type="checkbox"/>
103.26.47.0	/24					<input type="checkbox"/>	<input type="checkbox"/>
103.17.78.0	/24					<input type="checkbox"/>	<input type="checkbox"/>
122.129.120.0	/21					<input type="checkbox"/>	<input type="checkbox"/>
203.80.16.0	/21					<input type="checkbox"/>	<input type="checkbox"/>

Legend: ■ < 20%

Equipment:

- Core – Cisco XR
- Distribution – Cisco ASR 1002/M7i
- Access – j6350/Cisco 2900/HP A-MSR 30-20
- IBR – Cisco 1006

Line:

- STM OC-3 & OC-12
- Metro Ethernet

60/80 members are IPv6 ready (Dual-Stack)

# Infrastructure – Fact Sheet

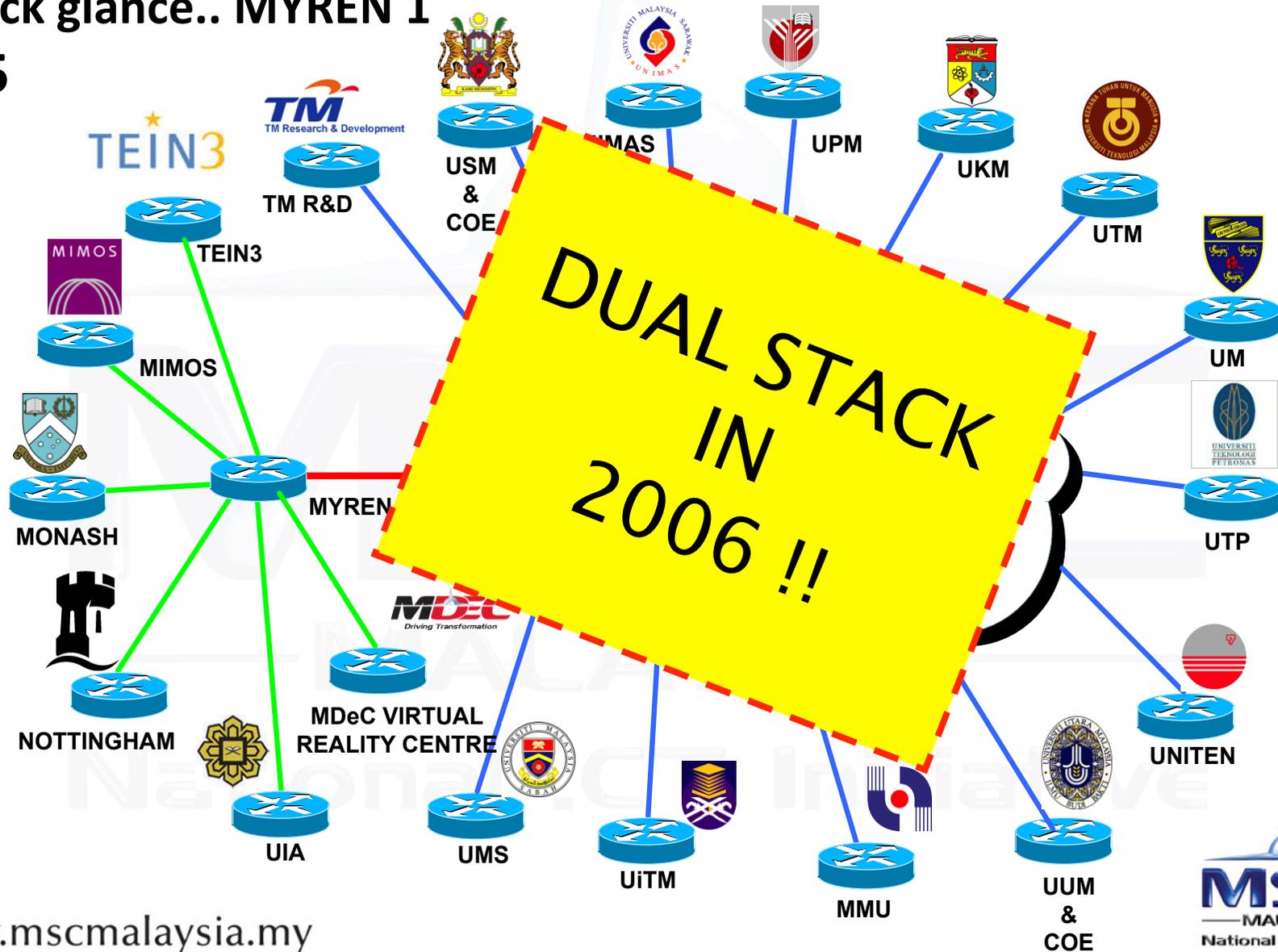
## Expansion Phases

- Phase 1 : Building MYREN (March 2005 – June 2010)
- Phase 2 : MYREN2 Core, IPTA/S (start at June 2010)
- Phase 2A : Expansion to 20 Politeknik & 20 Kolej Komuniti (start at October 2010)
- Phase 2B : Further expansion to Sarawak PoP, AKEPT, 2 Politeknik, 16 Kolej Komuniti (start at 2011)

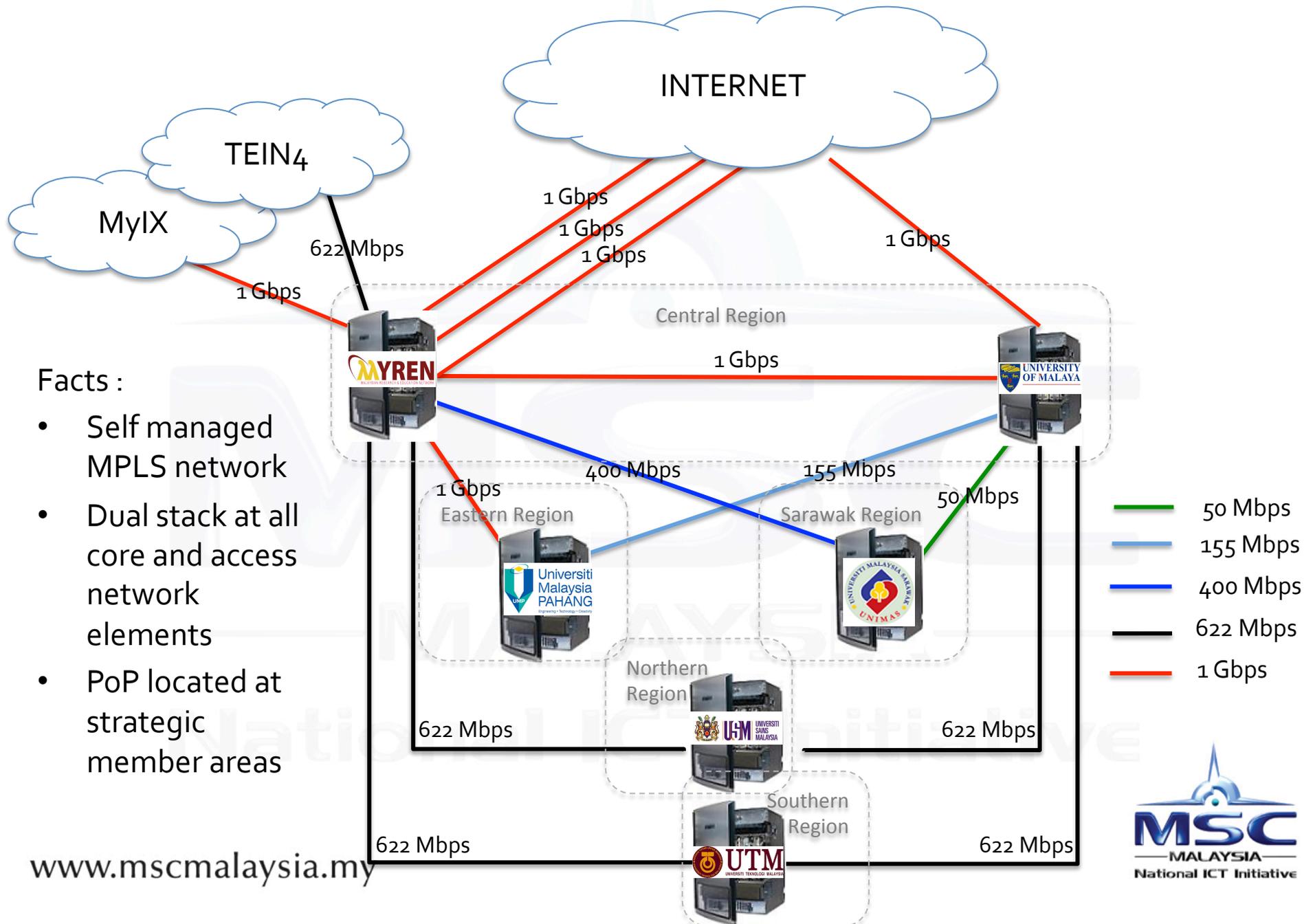


# Infrastructure

A quick glance.. MYREN 1  
2005



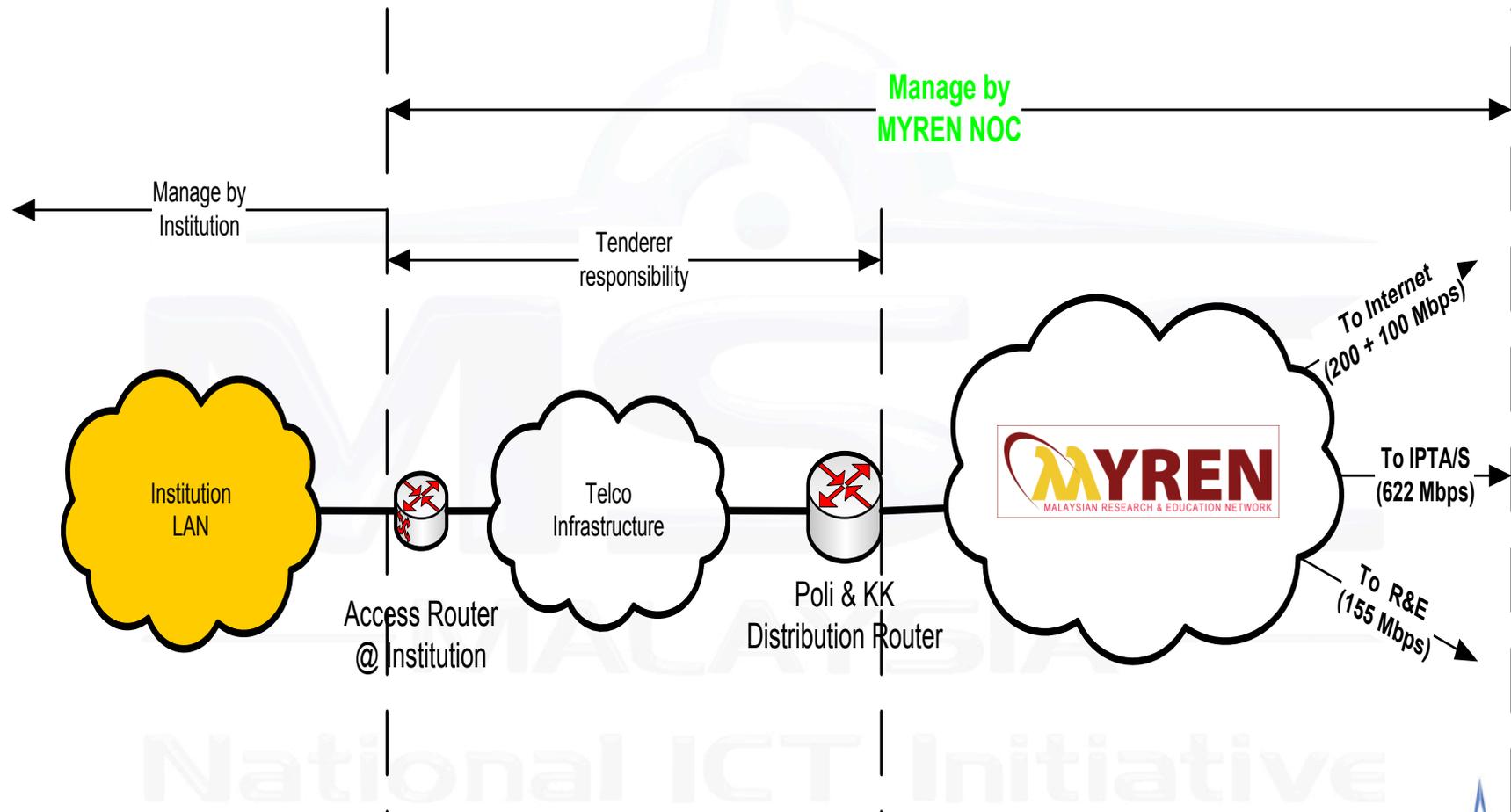
# Infrastructure - Existing



## Facts :

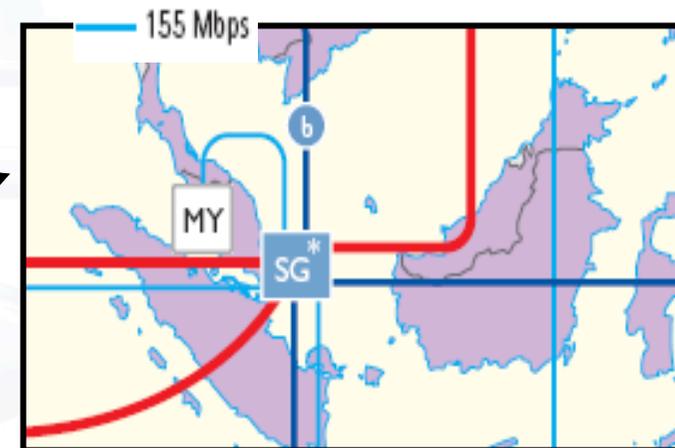
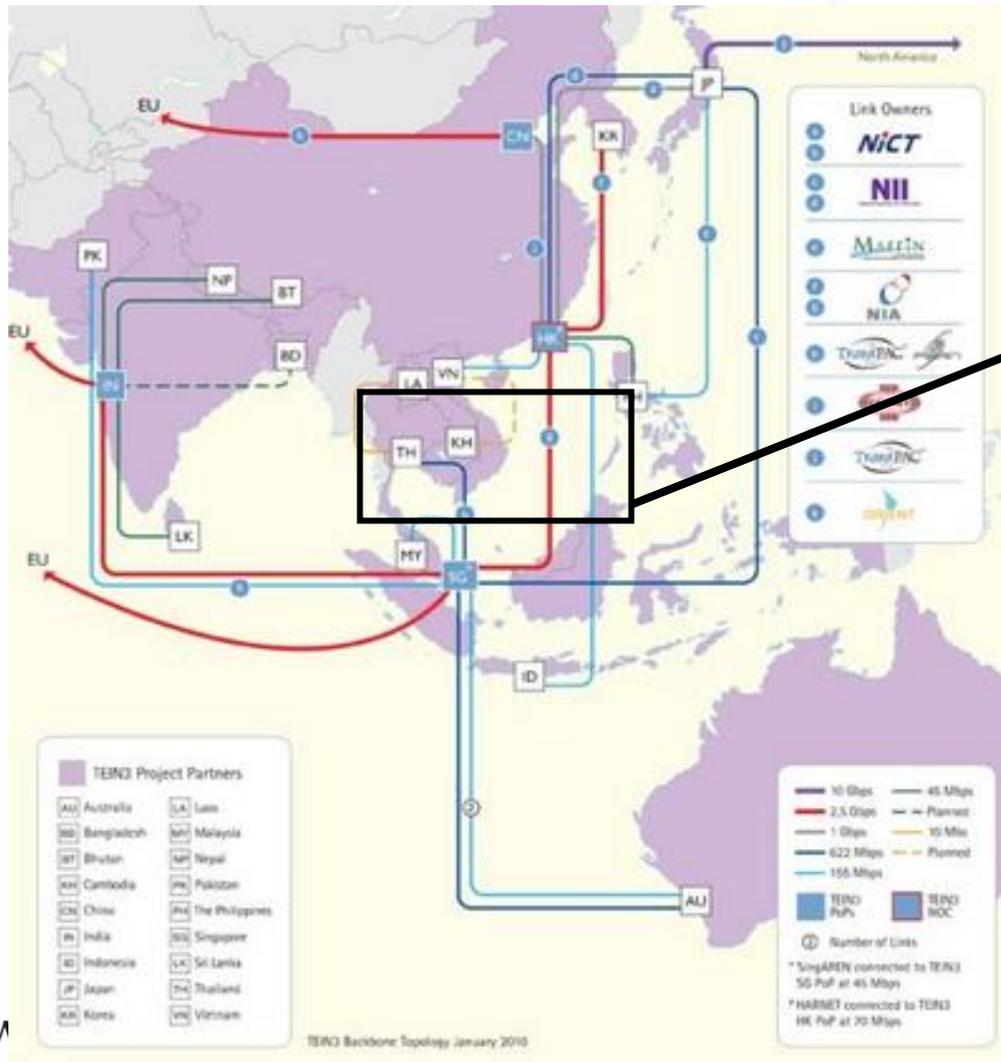
- Self managed MPLS network
- Dual stack at all core and access network elements
- PoP located at strategic member areas

# Infrastructure - Service Demarcation



# Infrastructure

## International IPv6 Cooperation and Linkages TEIN3 (Trans Eurasia Information Network)

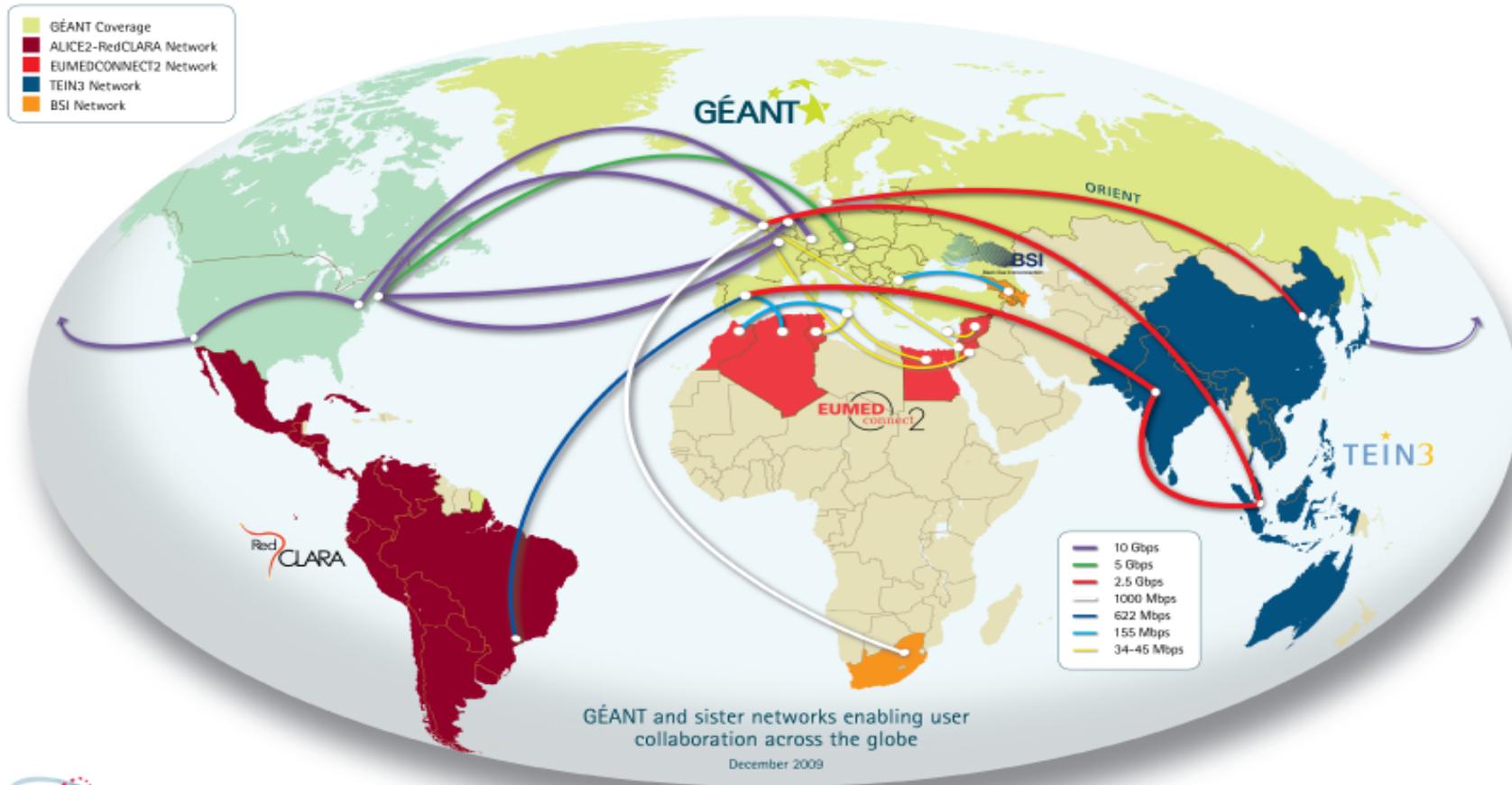


SIA  
Initiative

# Infrastructure

## International Cooperation and Linkages

**GÉANT**  At the Heart of Global Research Networking



# NMS Tools

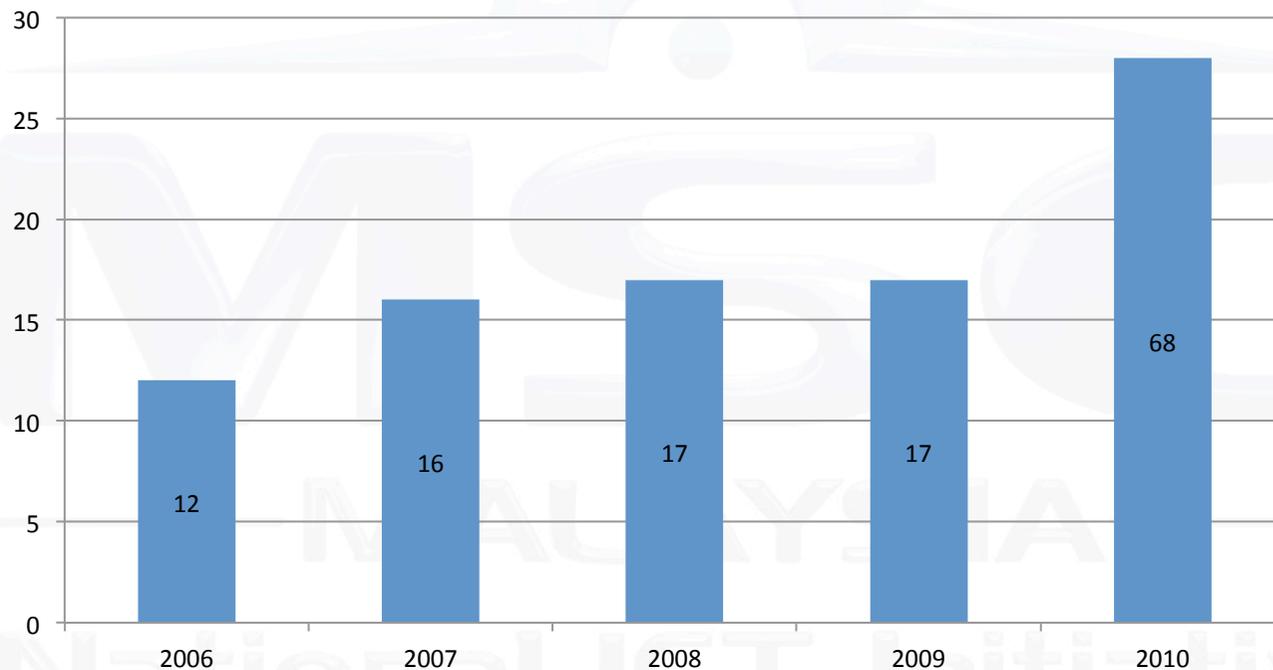
All are based on Open source software:

- Nagios – alerting
- Cacti – Usage report
- Weathermap – live network monitoring
- Looking glass – troubleshooting tool
- Rancid – configuration management
- Free Radius – authentication
- OTRS – troubleticketing system (under testing)

# MYREN Community and Program

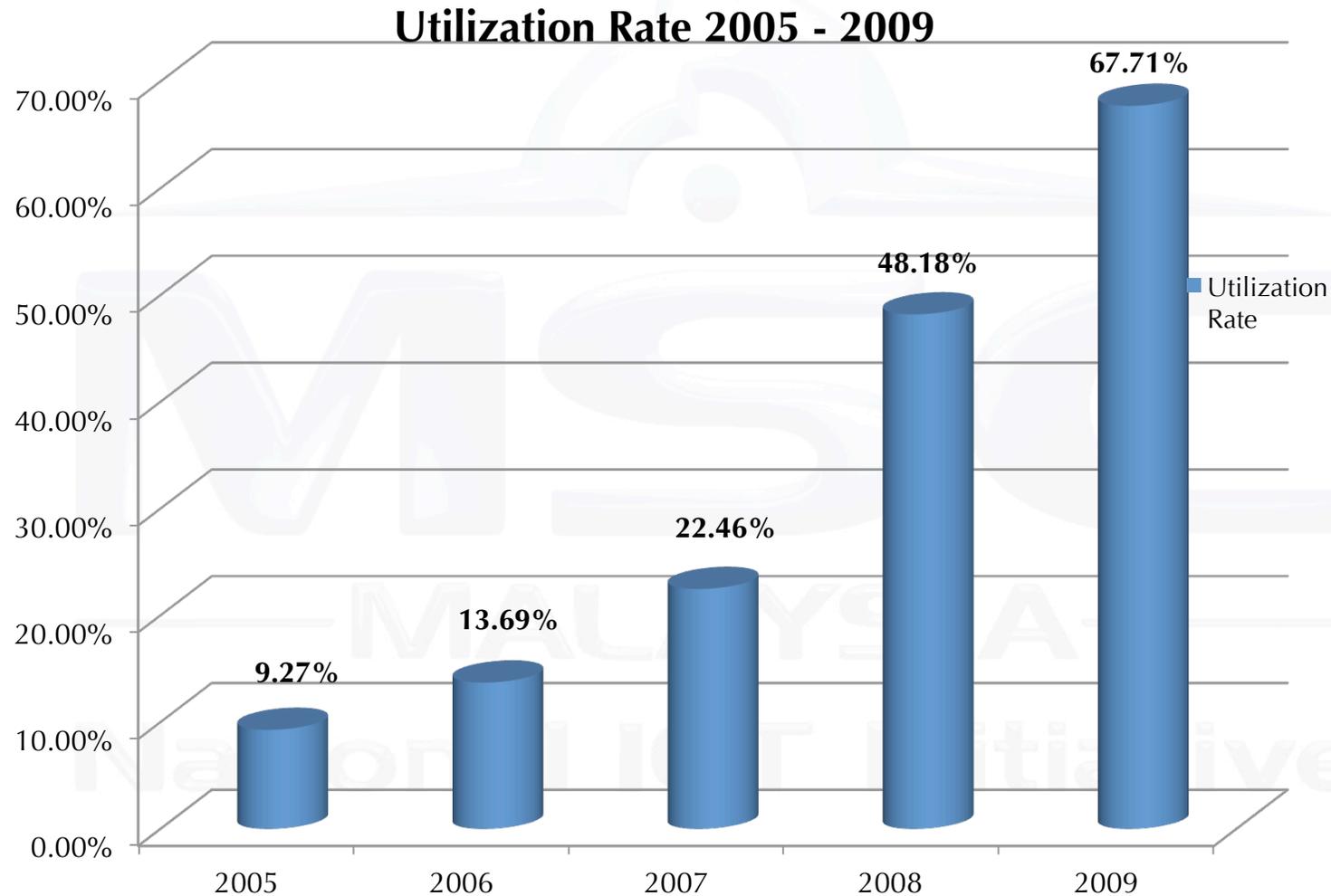
## Membership

- MYREN members are mostly public universities with some private universities and research organizations



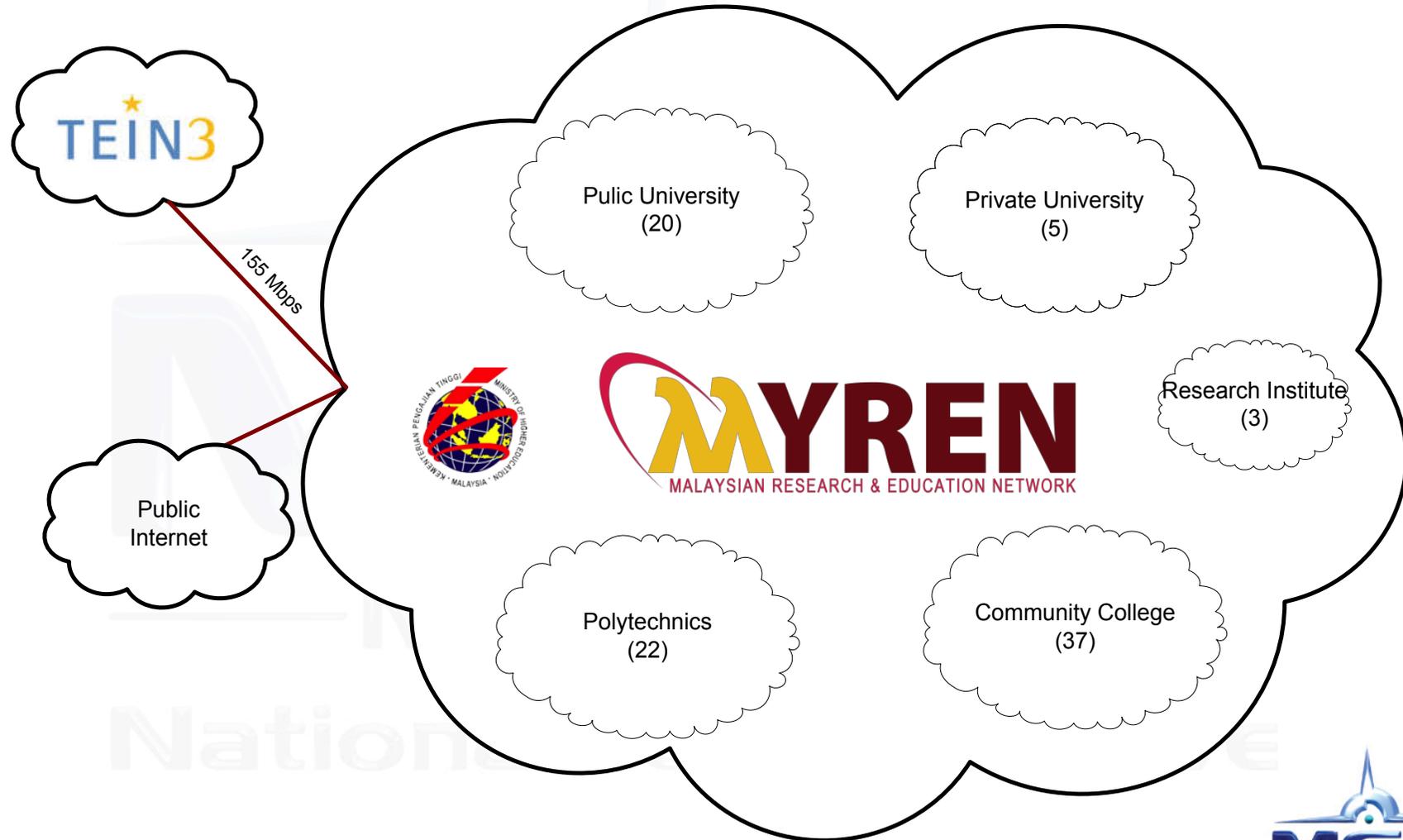
# MYREN Community - Utilization

## MYREN1 Network Utilization



# MYREN Community

## Members community



# Technical Activities To Be Completed 2014

- **To Complete MYREN2 Core Contract Renewal Project**
- **To award MYREN2C project – Renewal of 16 Access Sites**
- **To bring up Eduroam FLR (Federation Level Radius) Server**
- **To upgrade Iperf server connection at each PoP from 100Mbps to 1Gbps**





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**National ICT Initiative**