



TEIN3 Annual NOC Workshop NOC Country Reports and Discussions

Sharizan Sumuui
Network Manager
sharizan@myren.net.my

National ICT Initiative



Using IPv6 service of

**Malaysian Research and
Education Network**



Agenda

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

Introduction



Malaysia Research & Education Network

Examples of other regional and global NREN's



Asia Pacific

TEIN3



Europe



USA



Others



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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

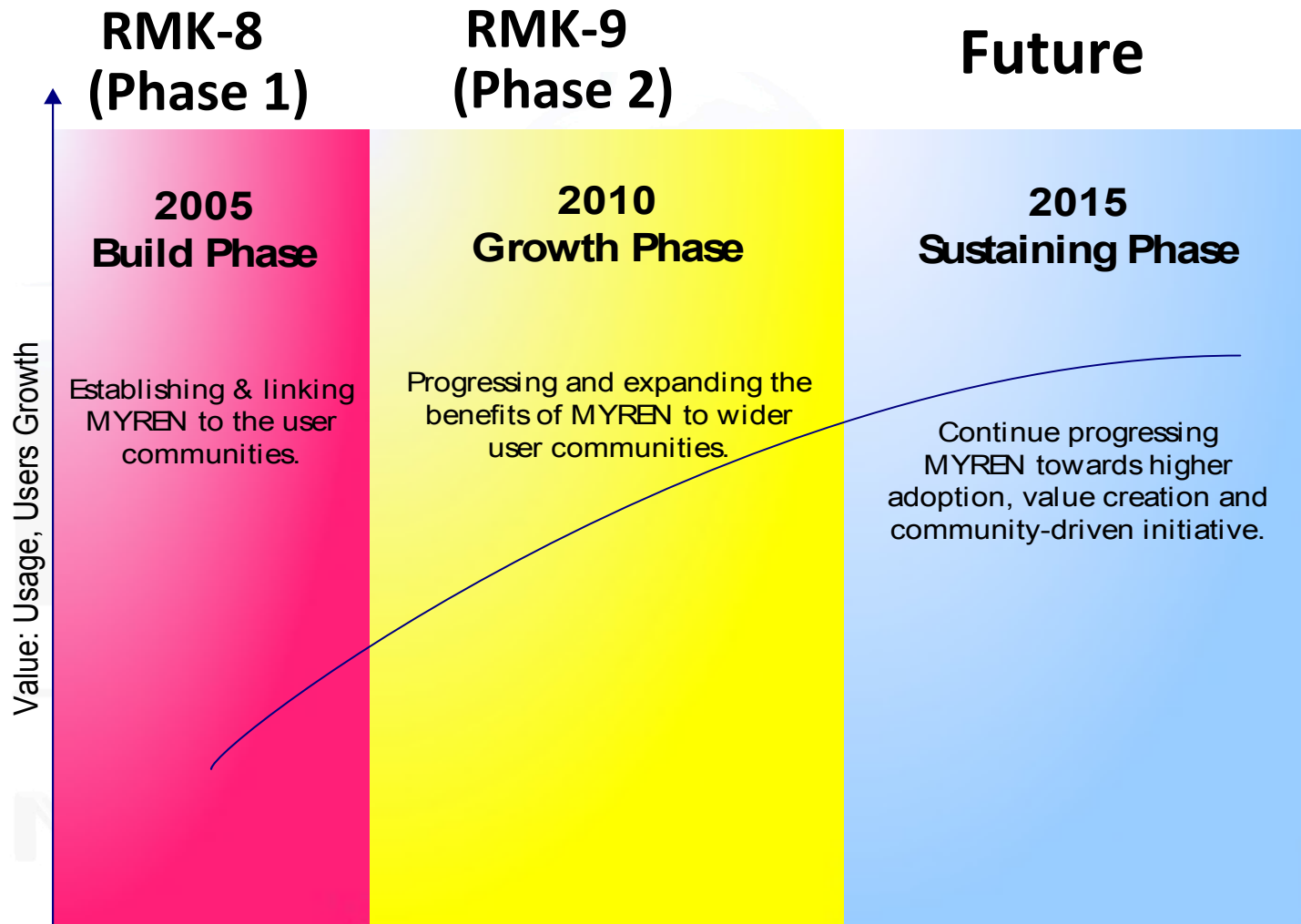


Services

- 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

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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%	<div><div></div><div></div><div></div><div></div></div>	update	<input type="checkbox"/>	<input type="checkbox"/>
103.26.74.0	/23	2013-06-19	100%	<div><div></div><div></div></div>	update	<input type="checkbox"/>	<input type="checkbox"/>
103.26.47.0	/24	2013-06-19	100%	<div><div></div></div>	update	<input type="checkbox"/>	<input type="checkbox"/>
103.17.78.0	/24	2013-02-27	100%	<div><div></div></div>	update	<input type="checkbox"/>	<input type="checkbox"/>
122.129.120.0	/21	2010-12-24	99%	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	update	<input type="checkbox"/>	<input type="checkbox"/>
203.80.16.0	/21	2005-12-23	90%	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	update	<input type="checkbox"/>	<input type="checkbox"/>

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

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

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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% ■ > 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

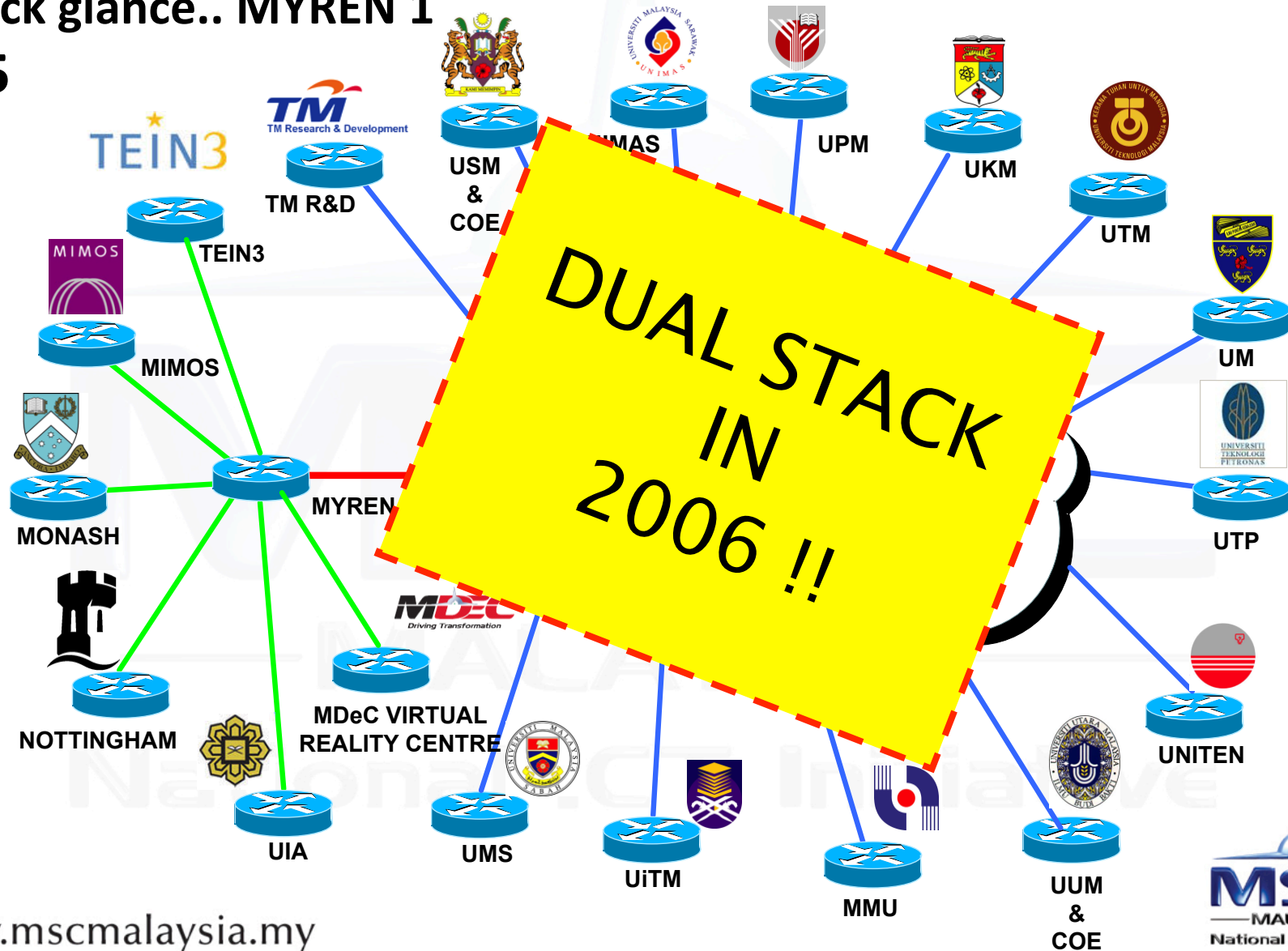
Expansion Phases

- 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)



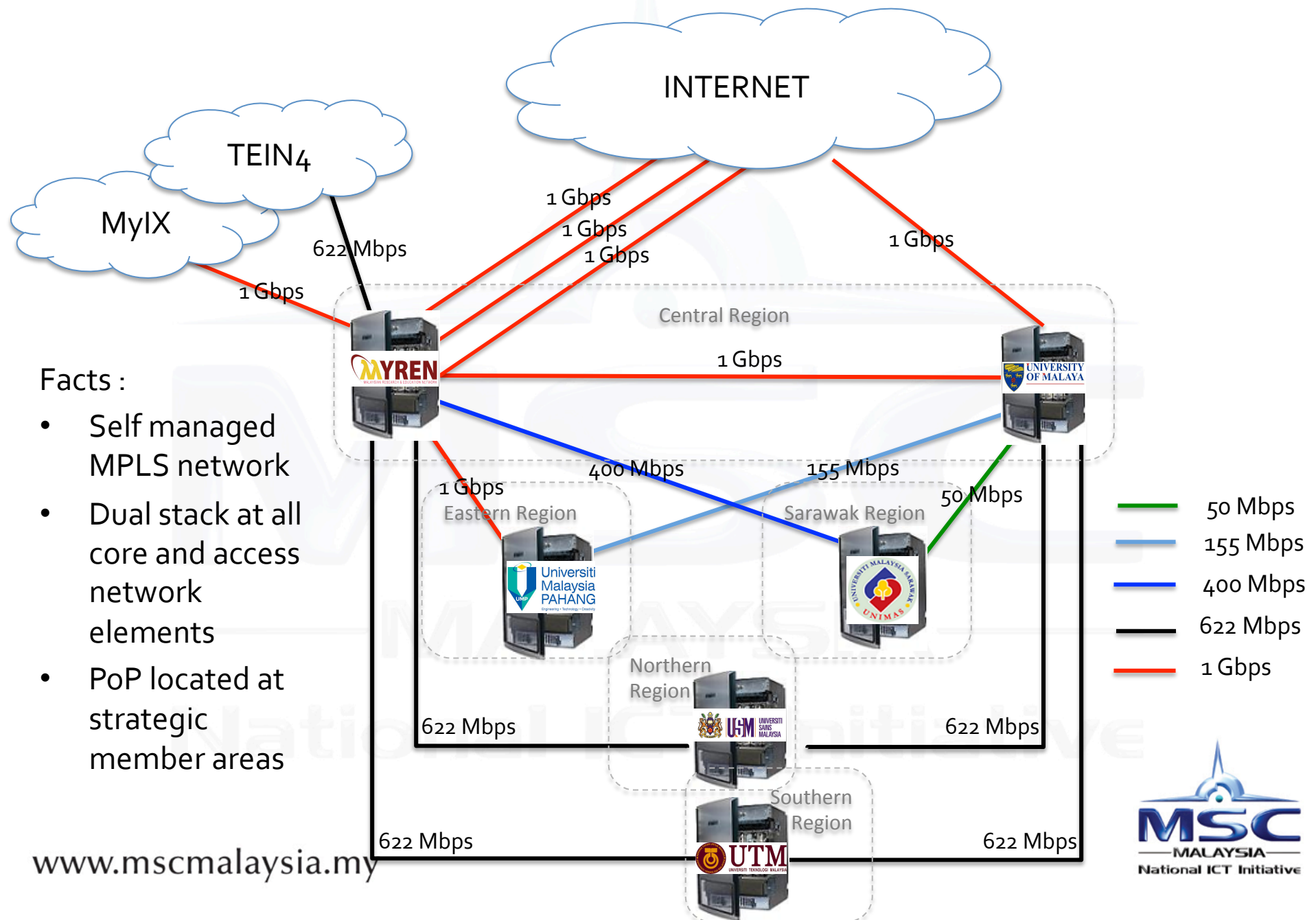
Infrastructure

A quick glance.. MYREN 1
2005

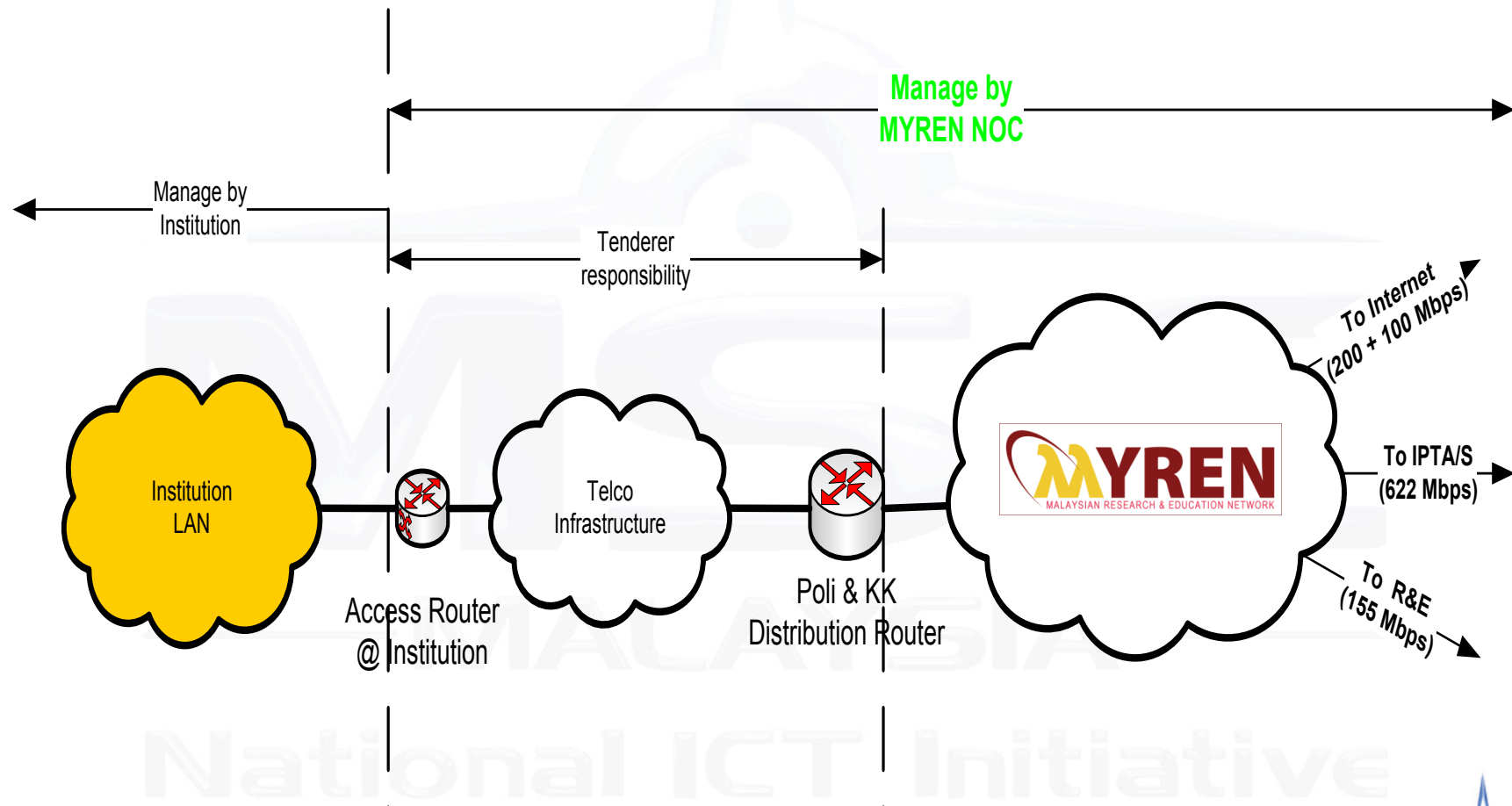


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Infrastructure - Existing

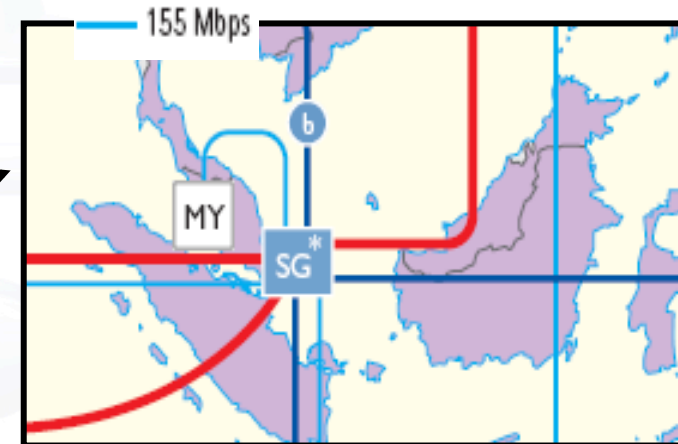
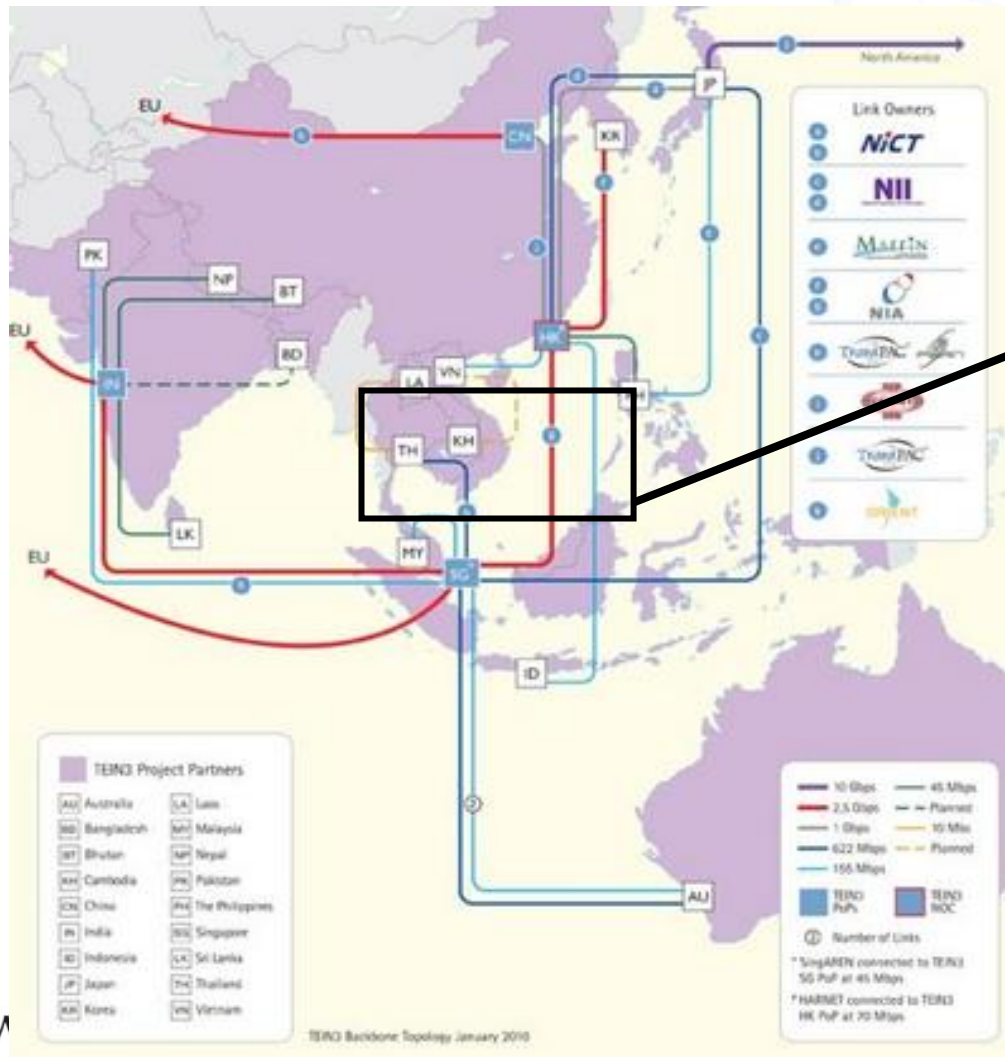


Infrastructure - Service Demarcation



Infrastructure

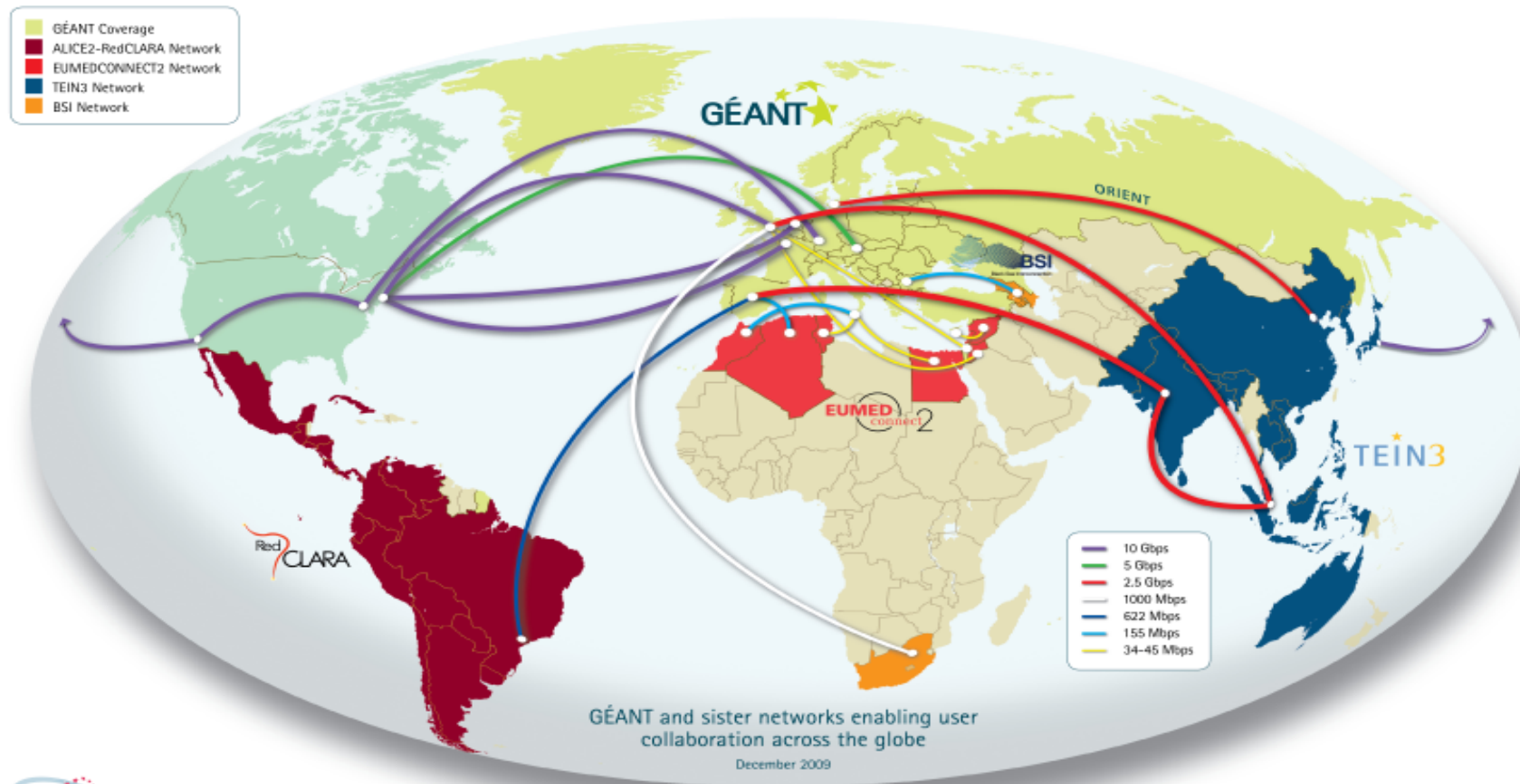
International IPv6 Cooperation and Linkages TEIN3 (Trans Eurasia Information Network)



Infrastructure

International Cooperation and Linkages

GÉANT At the Heart of Global Research Networking



NMS Tools

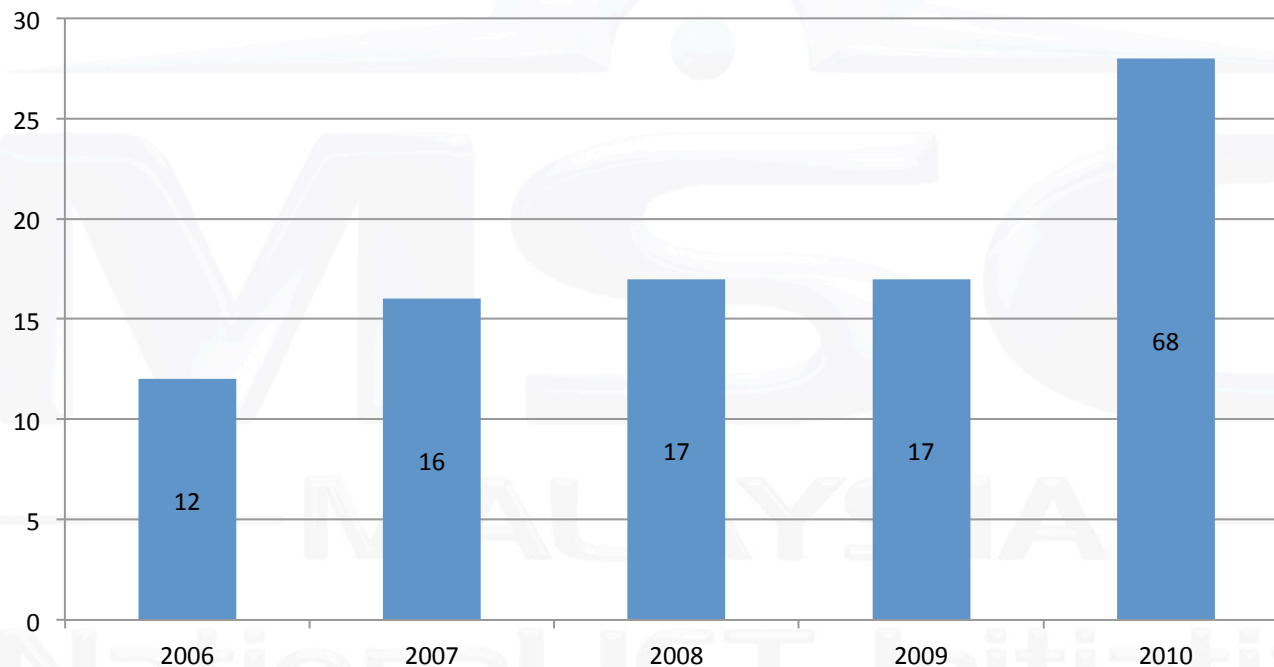
All are based on Open source software:

- 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

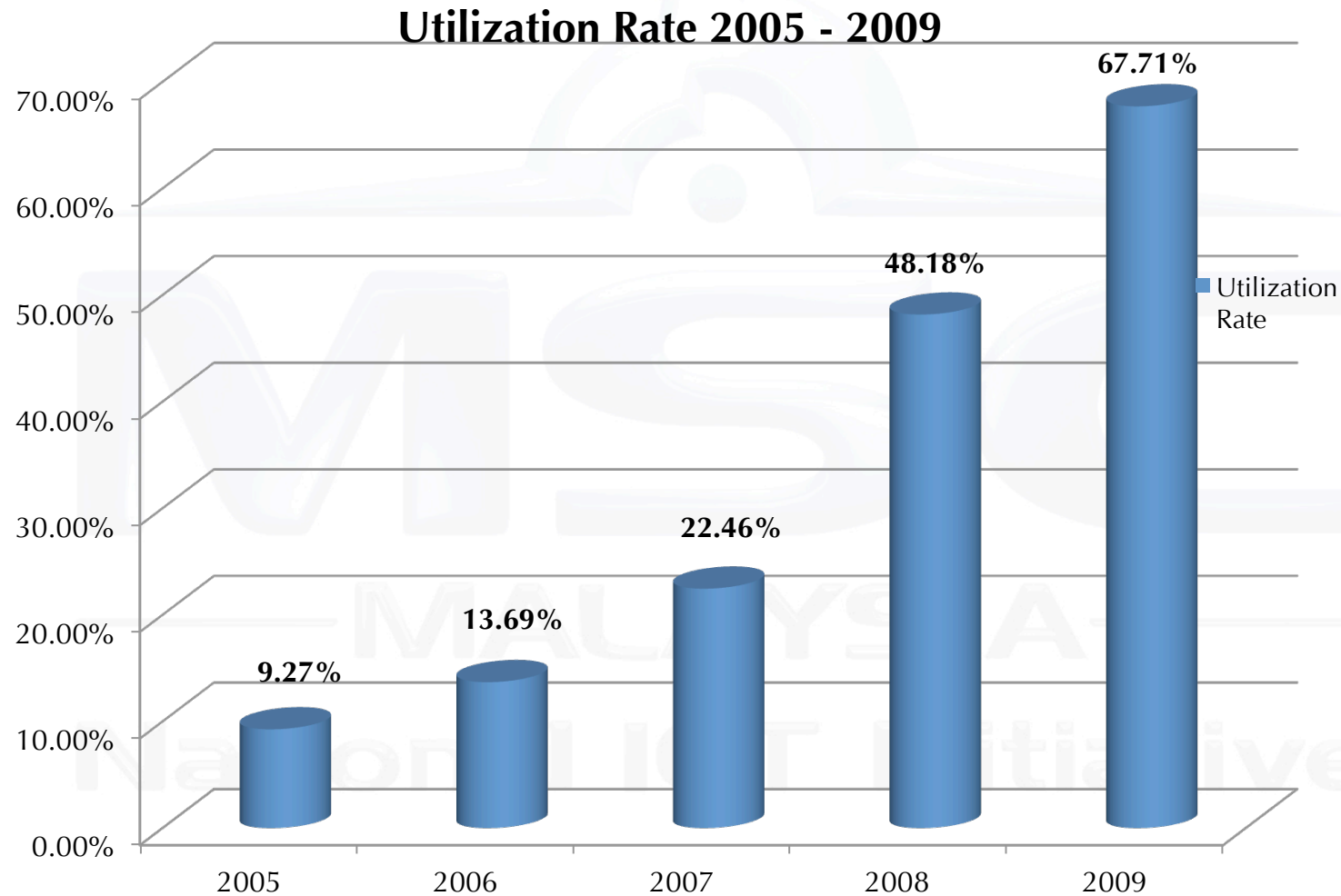
Membership

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



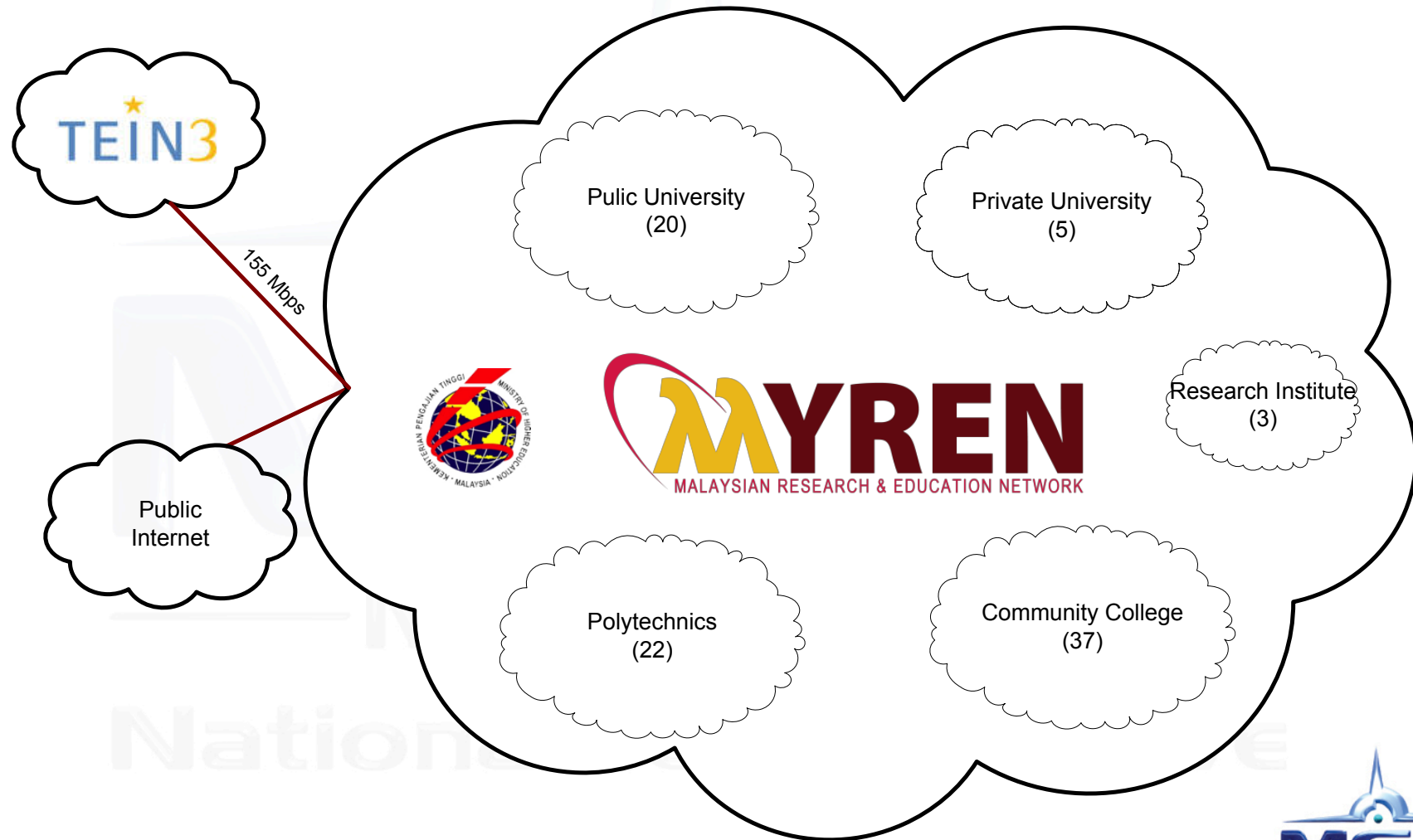
MYREN Community - Utilization

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





MSC

—MALAYSIA—

National ICT Initiative