

NREN's Technical Infrastructure and Strategic Initiatives

NPNOG-11

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Chairman, NREN

Research & Education Network (REN)

High-Performance Computer Network
Sharing knowledge, information and the resources
"Academic Internet"

National Research & Education Network (NREN)

Organization that operates REN,
Provides REN connection and other R&E service

SOUTH ASIA NRENs



NRENs
in the Globe



138 out of 193 UN
Member countries
have their own
NREN



REN Ecosystem

Connect regional and national networks together

Global Connections
Regional Networks

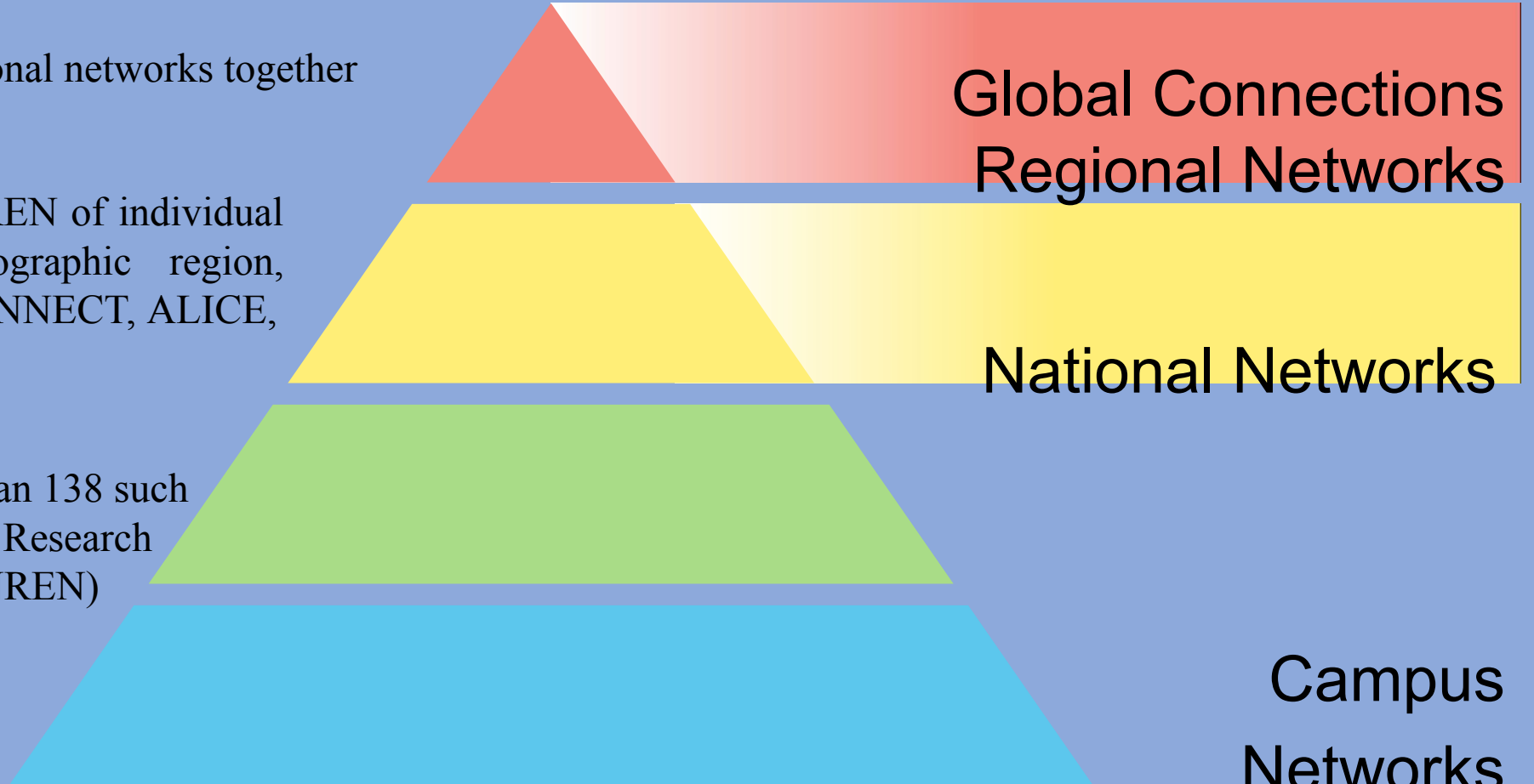
Regional RENs connect REN of individual countries within a geographic region, Geant, ASREN, ASI@CONNECT, ALICE, Ubuntunet etc.

National Networks

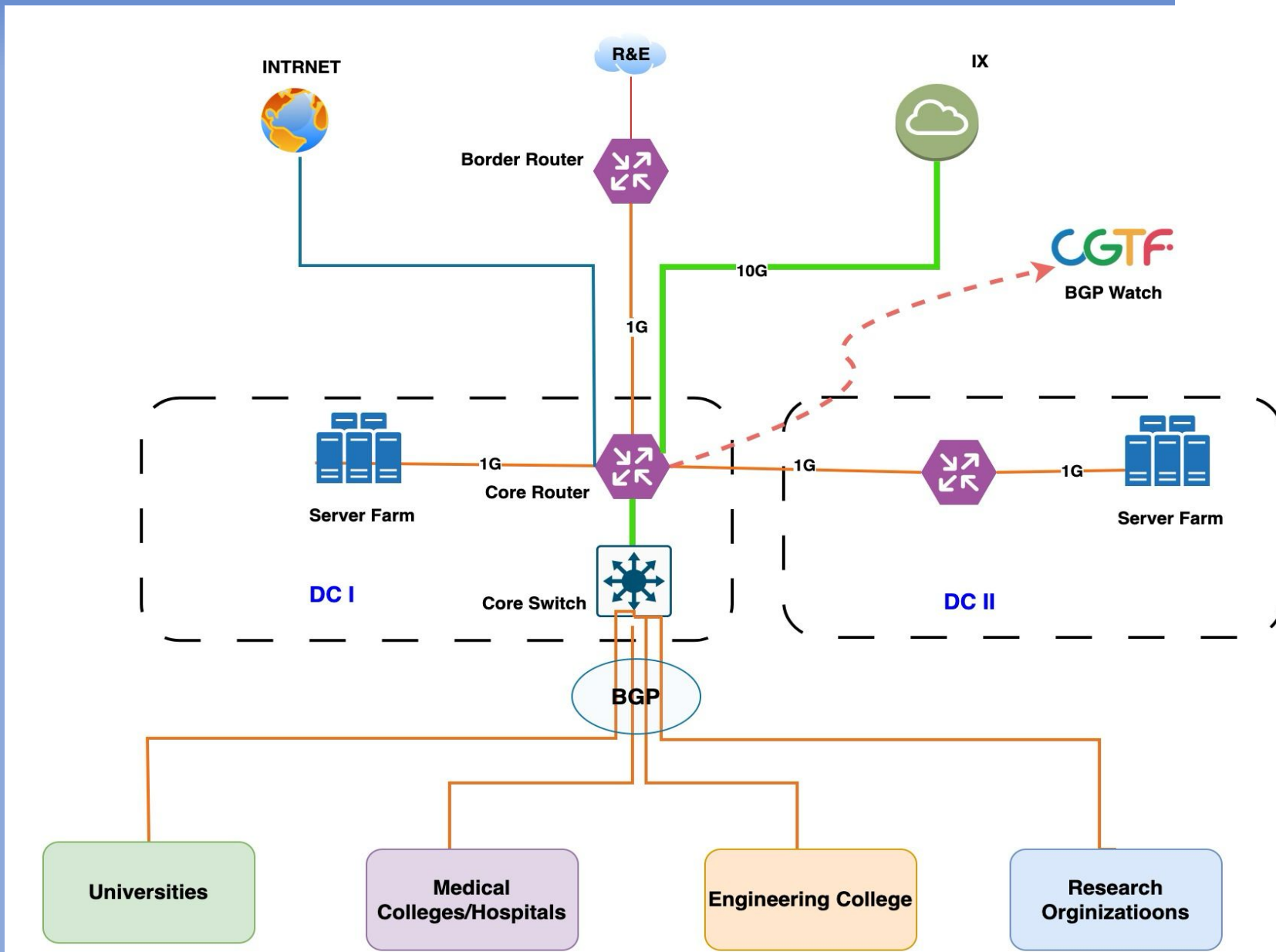
Globally there are more than 138 such National REN, e.g., Nepal Research and Education Network (NREN)

TU, KU, NOU, NAST, acem, Prime, etc

Campus
Networks



Nepal REN infrastructure



Connected institutions in NREN

Universities

Tribhuvan University
Kathmandu University
Nepal Open University
Agriculture and Forestry University
Madan Bhandari University
University Grant Commission
Policy Research Institute

Research Organizations

NAST
ICIMOD

Medical Colleges/Hospitals

IOM, TUTH
Dhulikhel Hospital
NAMS Bir Hospital
Kathmandu Model
Hospital
PAHS, Patan Hospital
National Medical College

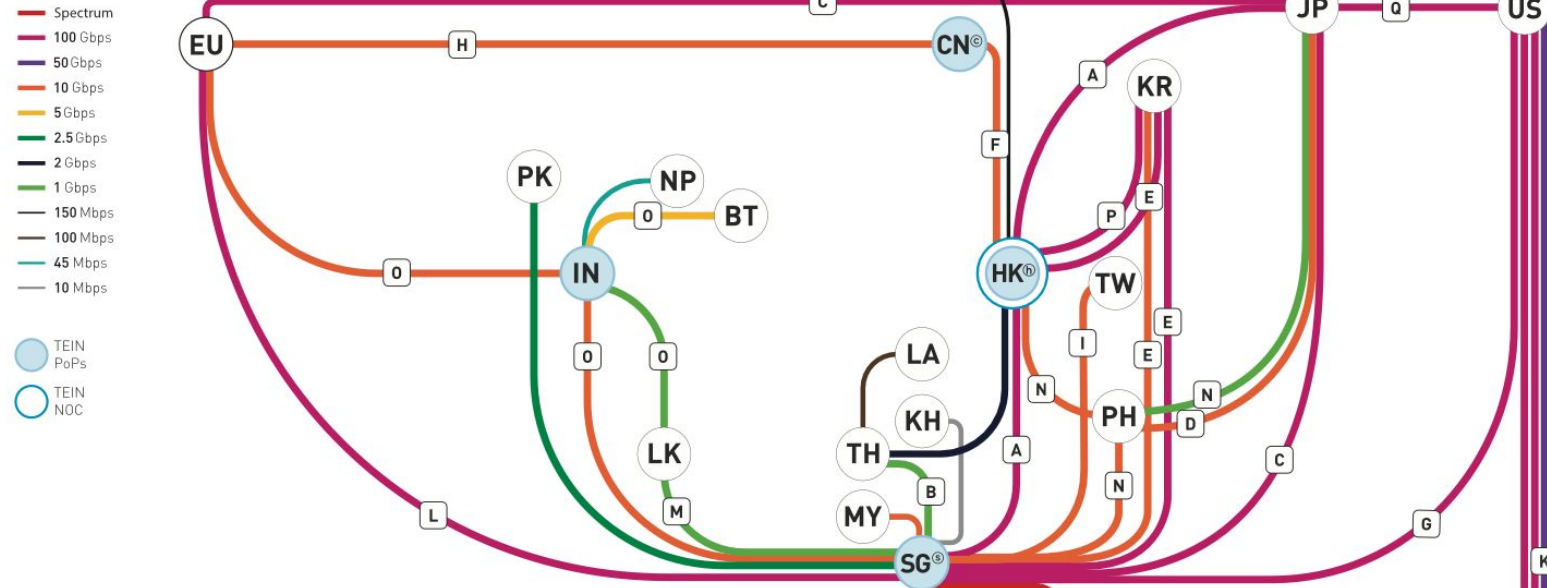
Engineering College

Prime College
Sagarmatha College
Cosmos College
Advanced College
ACME College
Khowpa Engineering College
Nepal Engineering College
Everest College
Kantipur City College



Trans Eurasia Information Network (TEIN)

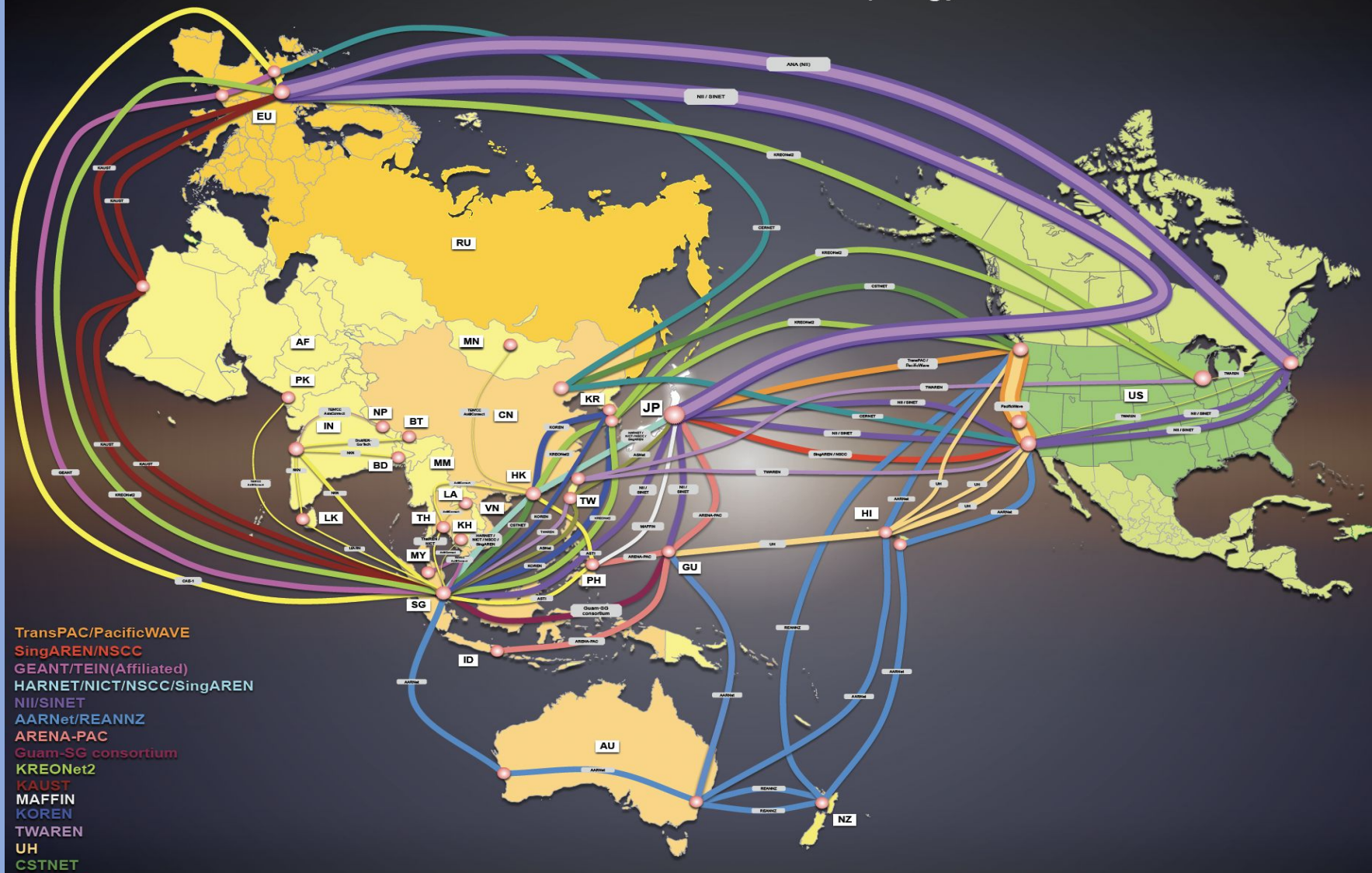
TEIN Map



Asi@Connect Project Partners

(AU) · Australia's Academic and Research Network (AARNET)	(LA) · Laos Education and Research Network (LERNet)
(BD) · Bangladesh Research and Education Network (BdREN)	(MY) · Malaysian Research and Education Network (MyREN)
(BT) · Government Technology Agency (DrukREN)	(MN) · Mongolian Research and Education Network (ErdemNet)
(KH) · Institute of Technology of Cambodia (CamREN)	(NP) · Nepal Research and Education Network (NREN)
(CN) · China Education and Research Network (CERNET) · CERNET connected to TEIN CN PoP at 10 Gbps · China Science and Technology Network (CSTNET)	(NZ) · Research and Education Advanced Network NZ Ltd. (REANNZ)
(HK) · The Hong Kong Academic and Research Network (HARNET) · The Hong Kong Open Exchange (HKOX) · HARNET and HKOX connected to TEIN HK PoP at 10 Gbps	(PK) · Pakistan Education and Research Network (PERN)
(IN) · National Knowledge Network (NKN)	(PH) · Advanced Science and Technology Institute (PREGINET)
(ID) · Indonesia Research and Education Network (IDREN)	(SG) · Singapore Advanced Research & Education Network (SingAREN) · SingAREN connected to TEIN SG PoP at 100 Gbps
(JP) · Ministry of Agriculture, Forestry and Fisheries Research Network (MAFFIN) · National Institute of Information and Communications Technology (NICT) · National Institute of Informatics (NII)	(LK) · Lanka Education and Research Network (LEARN)
(KR) · National Information Society Agency (KOREN) · Korea Institute of Science and Technology Information (KREONET)	(TW) · Academia Sinica Grid Computing (ASGC)
	(TH) · Thailand Research Education Network Association (ThaiREN)
	(VN) · National Agency for Science and Technology Information (VinaREN)

Asia-Pacific Backbone Topology





Access to Global
Research and Education
Network



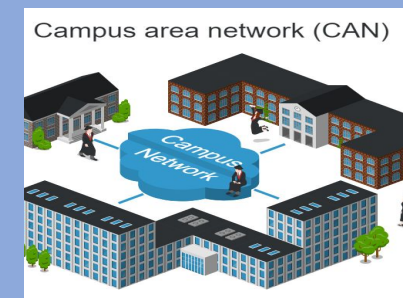
Eduroam
Access



Facilitation for
e-Resources
Access



Cloud Resources
for Research Activities



Campus Network Design
& Advisory



Capacity Building Training –
NREN, NPNOG, NPIX, etc.



Online Class, Meeting,
Conferences Support
through provisioning of
Zoom Access



Collaborative
Research Projects



Access to High
Performance Computing
Facilities

NREN's Support during Covid-19 Pandemic Crisis

Lockdown Period in Nepal, March 14 – July 21

- Total Meetings - 24,400
- Total Hours - 32,066
- Total Participants – 1.5 millions
- Webinars – 100 + with 25 K participants

- 60+ individuals has participated in different technical training and workshop organized in various countries.
- 380+ participants has gained knowledge and skills from various technical training organized by NREN
- 400+ individuals has participated in various video conference-based knowledge sharing sessions and events.
- Master's in Cyber Security – 4
- Cyber Security Course (Distance Learning) – 25 (more than 70 applicants)

- Campus Network Design and Operation Workshop
- Workshop on Building and Inclusive Information Society
- Internship on Basic NOC Training
- MPLS Network Design and Deployment Workshop
- Distance Education Workshop
- Multicast Hands on Workshop
- Wireless U Workshop
- Routing BGP Multihoming with IPv4 & IPv6 Workshop
- Basic Routing Workshop
- TEIN Annual NOC Workshop
- TEIN Workshop for e- learning Feasibility
- Eduroam Workshop
- GDLN Blended Learning face to face Training
- Telemedicine Engineering Workshop
- CSIRT Development in Asia meeting and Training
- NOC DNS Security Training
- BACKFIRE Training Identity and Access Management

eduroam allows researchers, teachers, students and staff to securely access the Internet from any participating eduroam enabled institution.

A promotional banner for eduroam. The left side is white with a blue curved border. It features the eduroam logo (a stylized 'e' with blue waves) and the text "Global Wi-Fi Roaming for Academia" and "eduroam.org.np". The right side is a solid blue background with the text "eduroam available here" in white. At the bottom right, there is a smaller NREN logo and the text "Nepal Research and Education Network" and "info@nren.net.np".

eduroam
Global Wi-Fi Roaming
for Academia
eduroam.org.np

eduroam
available here

NREN
Nepal Research and
Education Network
info@nren.net.np

- ❖ NREN is recognized as National Roaming operator.
- ❖ NREN member institution are connected with eduroam
- ❖ TIA International and Domestic airport has eduroam
- ❖ Planning to extend with more academic and education institutions.

Key activities planned

Expansion of Digital Infrastructure

High-Speed Connectivity:

Fiber Optic Network:

Capacity-Building Initiatives

Training Programs:

Technical Support and Consulting:

Support for E-Learning and Distance Education

e-Learning Platforms:

Distance Learning Solutions:

Promotion of Open Access

Digital Libraries and Open Access

Journals:

Collaborative Platforms for Research:

Support for Research Projects

Access to High-Performance Computing:

Data Repositories and Sharing Platforms

Initiatives in Cybersecurity

Cybersecurity Awareness and Training:

Network Security Enhancements:

Collaboration with International Networks

Partnership with APAN and TEIN:

Research Exchange Programs:

Digital and Research ecosystem in Nepal. Connected, Collaborative, and Innovative Academic Environment.

Key Supporters

MOEST, MOCIT, UGC

WorldLink
Dataspace

Subisu
Datahub

Vianet
Access World

Asi@connect
APNIC
ISOC
NSRC

BDREN
LEARN
CERNET
NKN

APAN-JP
APAN
Singaren
TEMDEC

GEANT
CERNET
NORDUNET

ENPHO
Gates Foundation

Conclusion

- NREN as a digital backbone of Nepal's knowledge economy
- Together, let's build an inclusive and resilient digital future