

Questionnaire for preparing 2019 Asi@Connect Compendium

Your Credential

1) Your Email Address:

2) Your Name:

3) Which Organizaiton/NREN are you from?

AARNet
AfgREN
BdREN
CamREN
CERNET
CSTNET
DrukREN
ErdemNET
HARNET
IDREN
LEARN
LERNET
KOREN
KREONET
MAFFIN
mmREN
MYREN
JGN
NKN
NREN
PERN
PREGINET
REANNZ
SingAREN
SINET
ThaiREN

NREN Contacts

4) Administrative Contact [Governer in Asi@Connect]:

Name: _____

Designation: _____

Email Address: _____

Phone Number: _____

5) Technical Contact:

Name: _____

Designation: _____

Email Address: _____

Phone Number: _____

6) Visibility Contact:

Name: _____

Designation: _____

Email Address: _____

Phone Number: _____

NREN Organization Structure and Financing

7) Which strategical policies are available in your organization? (Check all that apply)

Usage Policy

Connectivity Policy

Work from Home Policy

Environmental Policy

Other(please specify): _____

8) How many Employees were working in your Organization in Dec 31, 2019 under the following distinct categories?

Technical _____

Non-Technical _____

Permanent/Full Time _____

Contractual/ Part-time _____

Outsourced/ Honorary _____

Total _____

9) How many Female employees were working in your Organization in Dec 31, 2019 under the following distinct categories?

Technical _____

Non-Technical _____

Permanent/Full Time _____

Contractual/ Part-time _____

Outsourced/ Honorary _____

Total _____

10) How is your Capital Expenditure Financed (in %)?

Own Fund _____

Government Fund _____

Donation _____

Others _____

11) How is your Operating Expenditure Financed (in %)?

Own Fund _____

Government Fund _____

Donation _____

Others _____

12) How do you distribute the Operating expenditure among the following categories? (% of OPex)

Network Operations _____

Network Maintenance _____

Administration _____

Others _____

13) How do you perform your "Network Operations"?

Fully Self

Hybrid

Fully Outsourced

Other: _____

14) How do you perform your "Network Maintenance"?

Fully Self

Hybrid

Fully Outsourced

Other: _____

15) How do you arrange your connectivity [Backbone] "Node-to-Node" [Fiber Optic Infrastructure]?

Short Term Lease

Long Term lease

Self Owned

Blended

Other: _____

16) How do you arrange your connectivity [Access] "Node-to-Client" [Fiber Optic Infrastructure]?

Short Term Lease

Long Term lease

Self Owned

Blended

Other: _____

17) How do you maintain your Backbone Fibre?

Self

Short Term Lease

Long Term lease

Blended

Other: _____

18) How do you maintain your Access Fiber?

Self

Short Term Lease

Long Term lease

Blended

Other: _____

19) How do you charge the Membership Fees?

Free of Charge

Fixed/Flat Charge

Charged on "pay per use"

Other(please specify): _____

20) How do you charge the "Bandwidth" Service?

Free of Charge or Paid by the Government

Fixed/Flat Charge

Included in the Membership Fees

Charged on Usage (per Mbps)

Other(please specify): _____

21) How do you charge the "Other" Services?

Free of Charge or Paid by the Government

Fixed/Flat Charge

Included in the Membership Fees

Charged on Usage (per Service)

Other(please specify): _____

NREN Landscape and Market share

22) Which category of Institutions/members are currently connected to your network?

- Universities
- Research Institutes
- Government Organisations
- Schools and Colleges
- Museums/Libraries
- Hospitals/Medical Colleges
- Others

23) How many Institutions/members were connected to your network [end of 2019]?

Universities _____

Research Institutes _____

Government Organizations _____

Schools and Colleges _____

Others(Museums, Libraries, Hospitals/Medical Colleges, Industry, etc) _____

24) How many Institutions/members were in your Target to connect to your network [in 2019 only]?

Universities _____

Research Institutes _____

Government Organizations _____

Schools and Colleges _____

Others(Museums, Libraries, Hospitals/Medical Colleges, Industry, etc) _____

25) How many Institutions are on your target to connect [in 2020 only]?

Universities _____

Research Institutes _____

Government Organizations _____

Schools and Colleges _____

Others(Museums, Libraries, Hospitals/Medical Colleges, Industry, etc) _____

26) Approximately how many users were using your network/services under the following institutes?

Universities _____

Research Institutes _____

Government Organizations _____

Schools and Colleges _____

Others(Museums, Libraries, Hospitals/Medical Colleges, Industry, etc) _____

Total _____

27) How many universities are there in Total in your country?

28) How many different types of Institutions are connected with less than Fast Ethernet(FE) (100Mbps) physical link capacity?

Universities _____

Research Institutes _____

Government Organizations _____

Schools and Colleges _____

Others _____

29) How many different types of Institutions are connected with Fast Ethernet(FE) or equivalent (STM1/T4) physical link capacity?

Universities _____

Research Institutes _____

Government Organizations _____

Schools and Colleges _____

Others

30) How many different types of Institutions are connected with 1G or equivalent (STM4/STM16) physical link capacity?

Universities

Research Institutes

Government Organizations

Schools and Colleges

Others

31) How many different types of Institutions are connected with 10G physical link capacity?

Universities

Research Institutes

Government Organizations

Schools and Colleges

Others

32) How many different types of Institutions are connected with 40G/100G physical link capacity?

Universities

Research Institutes

Government Organizations

Schools and Colleges

Others

33) What is the highest Throughput (in Mbps) institutions are subscribing?

Universities

Research Institutes

Government Organizations

Schools and Colleges

Others

34) What is the Average Throughput (in Mbps) institutions are subscribing?

Universities

Research Institutes

Government Organizations

Schools and Colleges

Others

NRENs' Network Traffic and Monitoring

35) What type of traffic is/are carried through your NREN network/cloud?

Research Traffic

Commodity Traffic

CDN Traffic

Domestic Internet Exchange Traffic

Others (please specify): _____

36) Approximate what percentage of total traffic is used for Research and Education purpose?

37) Your Total Upstream [Download] Traffic Capacity, Mbps [in 2018]:

Commodity: _____

Research and Education: _____

Content Data Network [CDN]: _____

Internet eXchange Points (IXPs): _____

38) Your Total Upstream [Download] Traffic Capacity, Mbps [in 2019]:

Commodity: _____

Research and Education: _____

Content Data Network [CDN]: _____

Internet eXchange Points (IXPs): _____

39) Approximate Ratio of Download vs Upload [Place in the format of ratio **Download:Upload**] Traffic:

For Commodity Traffic: _____

For Research Traffic: _____

40) Your Total Yearly Traffic Volume [Throughput] in 2019, TB:

Commodity: _____
Research and Education: _____
Content Data Network: _____
Internet eXchange Points (IXPs): _____

41) URL to your MRTG [2019 and 2018, if possible]?

Commodity Internet: _____
Credentials to Access, if required: _____
Research Traffic: _____
Credentials to Access, if required: _____
CDN Traffic: _____
Credentials to Access, if required: _____
Domestic Internet Exchange Traffic: _____
Credentials to Access, if required: _____

42) What is the percentage of your IPv6 Traffic in ratio with Total Traffic?

43) How many IPv4 BGP Peers [in 2018]?

Upstream (Gateways): _____
Downstream (Clients): _____
Domestic IXPs: _____
CDNs & Others: _____

44) How many IPv4 BGP Peers [in 2019]?

Upstream (Gateways): _____

Downstream (Clients): _____

Domestic IXPs: _____

CDNs & Others: _____

45) Percentage of your upstream link availability => Commodity Traffic [in 2019]

Availability considering planned maintenance as non-outage _____

Availability considering planned maintenance as outage _____

46) Percentage of your downstream [Member Institutions'/Clients'] link availability (on Average) => [in 2019]

Availability considering planned maintenance as non-outage _____

Availability considering planned maintenance as outage _____

47) URL to your Network Diagram:

URL: _____

Credentials to Access, if required: _____

48) Do you maintain 7*24 NOC (Network Operation Centre) service?

Yes

No

49) Which tools do you operate for traffic monitoring and measurement? (Check all that apply)

Cacti

MRTG

Nagios

Libre NMS

SolarWinds

PerfSONAR

SmokePing

Weathermap

Others (please specify): _____

50) What kind of statistical data do you provide to your members? (Check all that apply)

Real Time Traffic Data - MRTG

Real Time Fault Report

Monthly Usage Data

Fault/Outage Data (Fault Frequency, Response and Restoration Time)

Monthly Availability

Others (please specify): _____

51) How do you communicate with your members/Institutions?

Realtime through URL

Email

Direct Phone Call

SMS

Social Media

Meetings/Seminars

Newsletter/Leaflets

52) Do you have any SLA (Service Level Agreement)?

Yes

No

53) Does your SLA contain the option of compensating clients with Financial Penalty?

Yes

No

NRENS' Service Platform

54) Which network services are you currently facilitating to REN Community? (Check all that apply)

- IPv4 Connectivity
- IPv6 Connectivity
- Network Monitoring
- Virtual Circuit/VPN
- Multicast
- Network Troubleshooting
- NetFlow Tool
- Optical Wavelength
- Quality of Service
- Managed Router Services
- Remote Access VPN Services
- Performance Enhancement Response Team (PERT)
- SDN
- Open Lightpath Exchange
- Disaster Recovery Services
- Other: _____

55) Which security services are you offering? (Check all that apply)

- CERT/CSIRT
- DDoS Mitigation
- Network Troubleshooting
- Anti-spam Solution
- Vulnerability Scanning
- Firewall-on-demand
- Intrusion Detection
- Identifier Registry
- Security Auditing
- Web Filtering
- PGP Key Server
- Online Payment
- Other: _____

56) Which Identity services have you already deployed? (Check all that apply)

- Eduroam
- Federated Services
- EduGAIN

GovRoam Services

Hosted Campus AAI

Other: _____

57) Which Collaboration services are you currently promoting? (Check all that apply)

Mailing Lists

Email Server Hosting

Journal Access

Research Gateway

VoIP

Project Collaboration Tools

CMS Services

Database Services

Survey-Polling Tool

Instant Messages

Scheduling Tools

SMS Messaging

Plagiarism

Learning Management Services

ePortfolios

Class Registration Services

Other: _____

58) Do you cover any of the following Multimedia Services to your REN Community? (Check all that apply)

Web/Desktop Conferencing

Event Recording/Streaming

TV/Radio Streaming

Media Post Production

Other: _____

59) Do you offer the following Storage and Hosting Services? (Check all that apply)

DNS Hosting

File Sender

Virtual Machines/IaaS

Cloud Storage

Housing/Colocation

Web Hosting

SaaS

Content Delivery

Disaster Recovery

Hot-Standby

Netnews

Other: _____

60) Do you have any Professional Services? (Check all that apply)

Hosting of User Conference

Consultancy/Training

User Portals

Dissemination of Information (Messages/News Letter)

Procurement Services

Software Licenses

Web Development

Software Development

Finance/Admin System

Other: _____

61) Please name maximum 5 (Five) flagship services which gives you competitive advantage over commercial providers.

Flagship Service-I: _____

Flagship Service-II: _____

Flagship Service-III: _____

Flagship Service-IV: _____

Flagship Service-V: _____

62) Total Beneficiaries of these services (please maintain the serial number in line with previous question)

Flagship Service-I: _____

Flagship Service-II: _____

Flagship Service-III: _____

Flagship Service-IV: _____

Flagship Service-V: _____

Advanced Services

63) Services demanded by users? (Check all that apply)

EduRoam

EduGain

HPC

Computing/Storage

SDN

E-Library

Research Gateway Server

High Performance VPS

IPv6

Security/NFV/SOC

Virtual Labs/Smart Classroom

IoT

Access to Journal and Research Databases

Connectivity to Public Cloud (Azure/AWS)

E-Learning

Big Data

Blockchain

Content Filtering

Telemedicine

Collocation

Others (please specify): _____

64) Services already implemented?

EduRoam

EduGain

HPC

Computing/Storage

SDN

E-Library

Research Gateway Server

High Performance VPS

IPv6

Security/NFV/SOC

Virtual Labs / Smart Classroom

IoT

Access to Journal and Research Databases

Connectivity to Public Cloud (Azure/AWS)

E-Learning

Big Data

Blockchain

Content Filtering

Telemedicine

Collocation

Others (please specify): _____

65) Services under pipeline for implementation?

EduRoam

EduGain

HPC

Computing/Storage

SDN

E-Library

Research Gateway Server

High Performance VPS

IPv6

Security/NFV/SOC

Virtual Labs / Smart Classroom

IoT

Access to Journal and Research Databases

Connectivity to Public Cloud (Azure/AWS)

E-Learning

Big Data

Blockchain

Content Filtering

Telemedicine

Collocation

Others (please specify): _____

66) Please state the implementation of IPv6 in:

	Full	Partial	None
DNS Server			
Web Server			
Mail Server			
DHCP/SLAAC Server/Router			
Routing System			

Switching System

67) How many IPv6 BGP peers do you have?

Upstream (Gateways):

Downstream (Clients):

Domestic IXPs:

CDNs and Others:

68) How many prefixes received from Upstream Peers (Gateways)?

IPv4:

IPv6:

69) How many prefixes received from Parallel Peers (CDNs and IXPs)?

IPv4:

IPv6:

70) How many prefixes received from Downstream Peers (Clients)?

IPv4:

IPv6:

71) Do you have IPv6 peering with TEIN upstream Gateway/s?

Yes

No

72) How many Application Servers are setup in your Cloud System?

IPv4 enabled

IPv6 enabled

73) Which type of configuration used in the network devices having IPv6?

Dual Stack

IPv6 Tunneling

Both Dual Stack and Tunneling

IPv6 yet to be implemented

74) How many Public ASN do you [NREN] have?

75) How many IPv4 (/24) Blocks do you have?

76) How many Members under NREN having independent ASN?

77) How many of the Members having IPv6 Routed ASN/Prefixes?

78) Have you already joined Mutually Agreed Norms for Routing Security [MANRS]?

Yes

No

Network Infrastructure: Dark Fibre

79) Do you have your own/Long Term Leased Dark Fibre for Domestic Usage?

Yes

No

80) Approximately how long is the length of owned/Long Term Leased Domestic Dark Fibre?

Less 1000 km

1000 to 10000 km

Over 10000 km

No Dark Fibre

81) Do You have your own/Long Term Leased Dark Fiber for Cross-border?

Yes

No

82) Approximately how long is the length of owned/Long Term Leased Cross Border Dark Fibre?

Less 1000 km

1000 to 10000 km

Over 10000 km

No Dark Fibre

83) Have you deployed any Alien Wave technology in Transmission?

Yes

No

84) Which services are being offered under this Alien waves technology?

85) Do you implement IP Trunk for the use of your network's VoIP framework?

Yes

No

86) What is the aggregate link capacity for IP Trunk?

Fast Ethernet

1G

10G

100G

87) Status of SDN (Software Defined Network) services in your organization?

Pilot services

Production Services

Tested

Planned

Not Planned yet

88) What is the state of NFV (Network Function Virtualization) in your Organization?

Implemented: Services Incorporated

Planned: Services Planned

Not Planned yet

89) What mode of Server Farm/Application services do you have?

Owned

Outsourced

Not Available

90) Please select the Protection availability of Application Services in your NREN.

Available

Not Available

TLS

Email Security like Spam
and Fishing protection

NGN Firewall

Sand Boxing

DDOS Protection

DPI

eduRoam Services

91) Do you have eduroam in your country?

Yes

No

92) How many Campus do you have under eduRoam coverage?

<10

>10 and <=50

>50 and <=100

>100 and <=500

>500

93) How many Access Points do you have with edurom configured?

<100

>100 and <=500

>500 and <=1000

>1000 and <=5000

>5000

94) Does your NREN have presence in "Service Location Map" under <https://monitor.eduroam.org/>?

Yes

No

95) Have you configured Statistics (F-ticks) which is displayed in <https://monitor.eduroam.org/>?

Yes

No

96) Have you configured Configuration Automation Tool (CAT) for enhancing eduRoam security?

Yes

No

97) Do you have govRoam Service?

Yes

No

98) Do you have eduRoam Hotspot available beyond Educational/Research Institute?

Yes

No

99) How many reported Authentications [from NRS] in 2018?

National:

International:

100) How many reported Authentications [from NRS] in 2019?

National:

International:

Identity and Trust Service

101) Status of Identity and Trust Services in your country:

- National Federation only
- Federation of Federations (eduGAIN)
- Under Test
- Under Plan
- Not Planned yet

102) Which services are being provided/planned using Identity Federation? (Check all that apply)

	Planned	Provided
Video Collaboration		
Digital Library		
Trusted Digital Certificate		
Big File Sender		
Cloud Storage		
Desktop/Laptop Backup Services		
Research Repository		

103) What is the architecture of Federation deployed by your organization? (Check all that apply)

- Mesh
- Hub and Spoke
- Centralized
- Hybrid
- Others (please specify): _____

104) Please provide information regarding your Federation Services?

Number of participating Home Organisations (IdPs) _____

Number of participating Services Providers (SPs) _____

Major Research and Education Collaboration Activities

[Reports will be generated highlighting the major Research and Education Collaboration Activities of NRENS. If there is nothing noteworthy, the Responent can skip this part. If there is more, the respondent can inform them over email to pmt@teincc.org]

105) Do you have any Research and Education Collaboration Activities?

Yes

No

106) Major Research and Education Collaboration Activities

Title of Research Initiative _____

Associated URL [You may skip the following if it is covered in the URL] with credentials [if required]: _____

Abstract _____

Name and Email Address of the 1st Author _____

Scope _____

Beneficiaries _____

Financing (Asi@Connect/ NREN/ Others) _____

How NREN could contribute (Financing/ Providing Infrastructure/ Human Networking/consultancy/ Others) _____

107) Do you have any other Research and Education Collaboration Activities?

Yes

No

108) *Major Research and Education Collaboration Activities*

Title of Research Initiative _____

Associated URL [You may skip the following if it is covered in the URL] with credentials [if required]: _____

Abstract _____

Name and Email Address of the 1st Author _____

Scope _____

Beneficiaries _____

Financing (Asi@Connect/ NREN/ Others) _____

How NREN could contribute (Financing/ Providing Infrastructure/ Human Networking/consultancy/ Others) _____

109) Do you have any other Research and Education Collaboration Activities?

Yes

No

110) *Major Research and Education Collaboration Activities*

Title of Research Initiative _____

Associated URL [You may skip the following if it is covered in the URL] with credentials [if required]:

Abstract _____

Name and Email Address of the 1st Author _____

Scope _____

Beneficiaries _____

Financing (Asi@Connect/ NREN/ Others) _____

How NREN could contribute (Financing/ Providing Infrastructure/ Human Networking/consultancy/ Others)

111) Do you have any other Research and Education Collaboration Activities?

Yes

No

112) *Major Research and Education Collaboration Activities*

Title of Research Initiative _____

Associated URL [You may skip the following if it is covered in the URL] with credentials [if required]:

Abstract _____

Name and Email Address of the 1st Author _____

Scope _____

Beneficiaries _____

Financing (Asi@Connect/ NREN/ Others) _____

How NREN could contribute (Financing/ Providing Infrastructure/ Human Networking/consultancy/ Others)

113) Do you have any other Research and Education Collaboration Activities?

Yes

No

114) *Major Research and Education Collaboration Activities*

Title of Research Initiative _____

Associated URL [You may skip the following if it is covered in the URL] with credentials [if required]: _____

Abstract _____

Name and Email Address of the 1st Author _____

Scope _____

Beneficiaries _____

Financing (Asi@Connect/ NREN/ Others) _____

How NREN could contribute (Financing/ Providing Infrastructure/ Human Networking/consultancy/ Others) _____

115) If contribution of NREN among the above activities is/are providing Infrastructure, please provide the following information accumulating all affiliated contributions. [Please fill with "0" if there is no contributions on a particular category]

The aggregate number of CPU cores: _____

The aggregate number of Memory Units in GB: _____

Consumed Traffic (Throughput in Mbps): _____

Spaced Data Volumes in TB: _____

Capacity Development

116) Aproximate % level of expertise among NREN Engineers:

Experts:

Intermediate:

Beginners:

117) Aproximate % level of Expertise of Engineers in Beneficiary Member Institutes?

Experts:

Intermediate:

Beginners:

118) Is there any impact of WP2 and WP3 packages on the level of expertise of NREN Engineers?

Yes

No

119) Comments of NRENs on enhancement of efficacy of WP2 and WP3 packages

120) Number of Asi@Connect Financed Training/Workshop in 2019 organized by NREN?

International:

National:

121) Number of own Financed Training/Workshop in 2019 organized by NREN?

International:

National:

Promotion of Research

122) Initiative from NREN (Promotional Material) in the year 2019:

Frequency of Printing Newsletter: _____

Frequency of Printing Leaflets/Brochures: _____

Tenders/Advertisements in Daily Newspapers/Web Portals: _____

Frequency of Arranging Other Souvenirs Gift Materials: _____

123) Initiative of NREN (Arranging Seminars/Meetings involving communities) in 2019:

Number of Arranged Virtual Seminars/Meetings (TEIN Sponsored): _____

Number of Arranged Physical Seminars/Meetings (TEIN Sponsored): _____

Number of Arranged Virtual Seminars/Meetings (NREN Sponsored): _____

Number of Arranged Physical Seminars/Meetings (NREN Sponsored): _____

124) Number of Registrants from NRENs' country:

In APAN47 _____

In APAN48 _____

125) Mode of Communications with Member Institutions regarding any event:

News Letter

Email

Voice

Facebook

Youtube

Twitter

Web Portal

Other: _____

Initiatives of TEIN*CC

126) Is there any way TEIN*CC can streamline its role in enhancing the efficacy of WP2 and WP3 packages?

127) Is there any way TEIN*CC can streamline its role in enhancing the efficacy of WP4, WP5 and WP6 packages?

128) Are you satisfied the way TEIN*CC reacted at the fallout of COVID-19? How do you think TEIN*CC could help more effectively the NRENs during the pandemic?

129) What are the strengths of TEIN*CC?

130) What are the weaknesses of TEIN*CC?

131) Are there any opportunities TEIN*CC can look into?

132) What are the looming Threats for TEIN*CC?

Impact of COVID-19: Challenges and NRENs' Adaptability

133) Month-wise Maximum Usage of Internet, Mbps

Jan, 2020

Feb, 2020

March, 2020

April, 2020

May, 2020

June, 2020

July, 2020

August, 2020

September, 2020

October, 2020

URL for the MRTG (if any):

134) Month-wise Maximum Usage of Research Traffic (Asi@Connect), Mbps

Jan, 2020

Feb, 2020

March, 2020

April, 2020

May, 2020

June, 2020

July, 2020

August, 2020

September, 2020

October, 2020

URL for the MRTG (if any): _____

135) Impact on Revenue as a fallout of COVID:

Highly Increased

Increased

Same as Before

Decreased

Highly Decreased

136) Major Threat due to pandemic

Reduction in Revenue

Unemployment

Network Security

Hardware overrun

Shortage of Software Licences

Others: _____

137) Big Opportunities

Collaboration among NRENs

Supporting Online Education

Supporting Tele-Medicine

Providing Computing/Virtualization Support

Any Other Opportunity: _____

Impact of COVID-19: NRENs' Response through supporting Online Education

138) Which Video Collaboration Software are being used by the Universities/Higher Education Institutes/Research Institutes

- Cisco Webex
- Zoom
- Microsoft Team
- Google Meet
- eduMEET
- Jitsi Meet
- BigBlueButton
- Others (please specify): _____

139) Month-wise Number of Virtual Classes/Meetings conducted by the Member Institutes under NREN

(No need to answer if NREN didn't give any support to the Member Institutes)

Jan, 2020	_____
Feb, 2020	_____
March, 2020	_____
April, 2020	_____
May, 2020	_____
June, 2020	_____
July, 2020	_____
August, 2020	_____
September, 2020	_____
October, 2020	_____

URL for the Usage (if any) with Credentials (if required): _____

140) Month-wise Total Duration (in Minutes) of Virtual Classes/Meetings conducted by the Member Institutes under NREN

(No need to answer if NREN didn't give any support to the Member Institutes)

Jan, 2020	_____
Feb, 2020	_____

March, 2020

April, 2020

May, 2020

June, 2020

July, 2020

August, 2020

September, 2020

October, 2020

URL for the Usage (if any) with Credentials (if required):

141) Month-wise Total Participants in Virtual Classes/Meetings conducted by Member Institutes under NREN

(No need to answer if NREN didn't give any support to the Member Institutes)

Jan, 2020

Feb, 2020

March, 2020

April, 2020

May, 2020

June, 2020

July, 2020

August, 2020

September, 2020

October, 2020

URL for the Usage (if any) with Credentials (if required):

142) Video Collaboration Software run on:

Internet Cloud

Local Data Center

Other: _____

143) Any increase in Domestic Internet Traffic (with IXPs)?

Yes

No

144) Domestic Internet Traffic Status:

Maximum IX (Internet eXchange) Traffic, January-2020, Mbps: _____

Maximum IX (Internet eXchange) Traffic, June-2020, Mbps: _____

145) Number of Total Available Software [Video Collaboration] Licenses:

146) Number of Maximum Software Licenses [Video Collaboration] used:

147) Is the quantity of number of available Licenses [Video Collaboration] enough for you?

Yes

No

148) Clients being Served through Video Collaboration Applications:

Number of Institutes: _____

Number of Faculty Members: _____

Number of Students: _____

149) Challenges faced by students [Check all that Apply]

Last Mile Network Quality

Bandwidth Cost

Availability of End-user Devices

Nonchalance about the mode of delivery

Confidence in the Assessment Process

Quality of Delivery

Quality of Content

Other Challenges not mentioned above: _____

150) Challenges faced by faculty members/universities [Check all that Apply]

Absence of Policy for "Online Education"

Lack of Training

Last Mile Network Quality

Bandwidth Cost

Availability of End-user Devices

Nonchalance about the mode of delivery

Confidence in the Assessment Process

Lack of LMS Software

Performing Lab/Hands-on Activities

Other Challenges not mentioned above: _____

151) Challenges faced by NRENs [Check all that Apply]

Limitations of Application Licenses

Lack of Hardware (Application running on own Data Center)

High Bandwidth Cost

Confidence in Assessment Process

Lack of LMS Software

Providing 24x7 support

Other Challenges not mentioned above: _____

152) Steps Taken for Mitigation of given Challenges

Limitations of Video Collaboration Application Licenses: _____

Lack of Hardware: _____

High Bandwidth Cost: _____

Confidence in Assessment Process: _____

Lack of LMS Software: _____

24x7 Support _____

Any other step _____

Impact of COVID-19: NRENs' Response through Supporting Tele-Medicine

153) Steps taken for Supporting Tele-medicine

154) Challenges Faced in Tele-medicine

155) Mitigating Steps Taken in Tele-medicine

Impact of COVID-19: NRENs' Response through Supporting Computing and Virtualization

156) Steps Taken in supporting Computing and Virtualization

157) Challenges Faced in Supporting Computing and Virtualization:

158) Mitigating Steps Taken in Computing and Virtualization:

Impact of COVID-19: NRENs' response through offering Other Services

159) Any other support services or Steps undertaken:

Impact of COVID-19: Others

160) What role TEIN*CC did play/could play to help NRENs?

161) Any Looming Threat?

162) Any Future Opportunity?

163) How TEIN*CC can help you in availing opportunity and dampening the threats?

Final Comments

(You can make Comment/Comments with regard to survey or something you expected but didn't find while filling out the survey form)

164) Comment/s on Conducted Survey