



Computer Centre Tezpur University

Napaam – 784028, Sonitpur, Assam, India

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7th February 2022

To Whomsoever it May Concern

Tezpur University has been connected to the Internet through National Knowledge Network (NKN) which is the Internet Service Provider for almost all educational and government institutes since 2010. **The bandwidth allocated to this institute is 1Gbps (1000Mbps) unrestricted.** The media from the NKN Regional Hub, Dispur to Tezpur University is provided and maintained by BSNL. The router is managed and maintained by NKN team. The internet connections within the LAN are extended by use of NAT/Proxy Server.

(NITYANANDA SARMA)
Director
Computer Centre

Registrar
Tezpur University
Napaam, Tezpur



Memorandum of Understanding (MoU)
between
National Knowledge Network (NKN)
and
Tezpur University

**National Knowledge
Network**

MoU FOR SERVICES ON NATIONAL KNOWLEDGE NETWORK

This MoU (this "Agreement"), dated 14th November, 2011 is entered into by and among

PARTIES TO THE MEMORANDUM

National Informatics Centre (NIC), Department of Information Technology, Ministry of Communication and Information Technology, Government of India at (Block-A, CGO Complex, Lodi Road, New Delhi-110003) which is the "**Project Execution Agency (PEA)**" for coordinating the implementation of National Knowledge Network (NKN) Project by the designated High Level Committee (HLC) on NKN.

AND

Tezpur University, hereinafter referred to as 'User' with office at Napaam, Tezpur – 784 028, Sonitpur, Assam

RECITALS:

WHEREAS,

- a) **NKN** is a state of art Multi-Gigabit Pan-India network. It has been designed to ensure the highest level of availability, quality of service, and robust, secure and reliable connectivity for extending network based services.
- b) "**Project Execution Agency (PEA)**" is the implementing agency on behalf of NKN Project, till such time a Special Purpose Vehicle (SPV)/Successor is not established. Once the SPV/Successor is established then all the roles agreed for by "PEA" in this agreement shall be as it is, transferred to the SPV/Successor.
- c) Pursuant to the terms and conditions of this Agreement, User desires to obtain Right of Use in the NKN network, upon accepting the terms and conditions set forth in this Agreement.

NOW THEREFORE, the User desires to use / make certain services available via a connection to NKN and the Parties have agreed that those services be made available on the terms and conditions set out in this Agreement. In consideration of the matters recited, the commitments contained herein, and the purpose and scope, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. DEFINITIONS

The following terms shall have the definitions indicated. Capitalized terms not defined in this Agreement shall have the meaning ascribed to them in the Agreement.

"Access Link"	the access link and/or other equipment which is required to make the connection between the User's network and NKN;
"Agreement"	this agreement, including its Exhibits, as may be amended from time to time under Clause 24.2;
"Clause"	a clause or sub-clause of this Agreement;
"Connectivity"	is the term used to describe the network based connectivity between the PEA and the User

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"Confidential Information"	all information (in whatever form) designated as such by the other Party together with such information which relates to the business affairs, networks, computer systems and installations, technology, developments, trade secrets, know-how, products, services or personnel of the other Party, or users and Users (or potential users and Users) of the other Party's products or services, or information which may reasonably be regarded as the confidential information of the other Party;
"Fees"	the fees payable by the User to NKN under this Agreement, as set out in Clause 5;
"Fiber Mile"	means a linear mile of one strand of Lit Fiber, which length shall be measured along the path of the cable route, and not by vertical and horizontal distance;
"Interruption"	means any failure, interruption, impairment or degradation of the operation of the NKN Fibers that commercially impairs NKN's use of the Fiber between two adjacent PoPs (but not including any failure, interruption, impairment or degradation caused by User);
"Maintenance"	shall mean Scheduled Maintenance;
"PoP"	means a terminal facility (Point of Presence) used for origination/termination of traffic and shall not include sites used extensively for regeneration or amplification;
"Services"	the services which the User is permitted to provide to Users on NKN pursuant to this Agreement, as may be amended in accordance with this Agreement;
"User"	Organization/Establishment which shall have a NKN connection


Also,

- a) Clause headings are inserted in this Agreement for convenience only and they shall not be taken into account in the interpretation of this Agreement.
- b) The singular includes the plural and vice versa.
- c) References in this Agreement to "Party or "Parties" mean party or parties to this Agreement.

2. TERMS OF AGREEMENT

This Agreement shall commence on the Commencement Date and, subject to earlier termination in accordance with the provisions of this Agreement, shall have an initial term till "**31st December 2019**". In case there are any additions/modifications required in the agreement, it shall be modified on a case to case basis as per the decision of the High Level Committee of the NKN Project. After the initial term, this agreement shall be renewed as agreed by the parties to this agreement unless:

- 2.1 PEA gives the User, a written notice to terminate this Agreement, either at the end of the initial term, or based on a notice to be provided at least three (3) months in advance; or



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2.2 User gives PEA, a written notice to terminate the Agreement. At any time, such notice shall be provided at least three (3) months in advance. (Refer to section-20 for details)

3. PROVISION OF SERVICE

3.1 Subject to the User complying with the terms and conditions of this Agreement, PEA shall provision NKN Services to the User.

3.2 PEA shall use all reasonable endeavors to provide the service in accordance with the standard Network Service Levels.

3.3 Access to NKN Project is provided by the PEA:

- a) On a non-exclusive basis, where the PEA shall be entitled to allow / provide others the same or similar service at any time; and
- b) Solely for the purpose of providing the services to users.

3.4 The Service does not include:

- a) Internet Protocol (IP) transits other than to the Users.

4. RESPONSIBILITIES OF PARTIES TO AGREEMENT

4.1 Responsibilities of User

- a) The user shall appoint one technical personnel to be the single point of contact for the PEA and one alternative technical contact in case former is not contactable / available for whatsoever reason may be. This person shall be responsible for all communications, correspondence and actions between the User and the PEA. The PEA shall not be required to get in touch with any other person at the User.
- b) The User shall supply or provide the Access Link, Equipment Space (at least 10 X 10 Sq. ft. in the beginning), Personal Computers, Air Conditioners, UPS etc. (including but not limited to) at its own expense in order to enable PEA to provide the NKN Services. The goods and services provided by the User should be compatible with the project requirements, as intimated to the nodal officer from User. User shall also be responsible for the suitability, sufficiency, repair and maintenance of the equipment provided by them.
- c) The User shall ensure that the Access Link, Equipment Space (at least 10 X 10 Sq. ft. in the beginning), Personal Computers, Air Conditioners, UPS etc. (including but not limited to) is suitable for the connection and service through the NKN project and in accordance with the reasonable instructions of the PEA and/or its sub-contractors. The user should consult the PEA for prior approval before acquiring any goods and/or services for the project and PEA will follow recommended specifications for approving such goods and/or services.
- d) In case the PEA chooses to use NKN's resources installed at the User's site to connect another User to the network, the User shall allow full access to the PEA personnel for such implementation including access to equipments and space in its premises, pertaining to NKN connectivity.
- e) In case the User decides to shift the location of the Institute then, in order to enable the PEA to arrange for such shift, the User shall inform the PEA three (3) months in advance. (For further details pertaining to location shift please refer Section 5)
- f) **Security.** User shall ensure the security of the entire NKN project related equipment (both owned by the User & PEA and/or its sub-contractors), installed within User's compound (List of PEA Equipment shall be maintained as per **Exhibit C**). This shall also

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include managing the Facilities Management System (FMS) within the Institute Compound, along with the following:

- i. Collecting and maintaining contact details of NKN Nodal officer assigned to User;
 - ii. Maintaining the escalation procedure/process and contact information for contacting the next level officer of PEA, dealing with the User Account.
- g) **Accessibility in User Compound.** The User shall ensure accessibility to the nominated personnel of the PEA and/or its sub-contractors, twenty-four (24) hours a day, seven days a week for the NKN project related equipment within the compound of the User.

4.2 Responsibilities of PEA

- a) PEA shall be responsible for connecting the Access Link to User equipment.
- b) PEA shall provide support services for NKN project. The support services may include:
 - i. Provide contact details of the Nodal Officer to the NKN User.
 - ii. Provide services support for the NKN Network.
- c) PEA shall not be responsible for any failure to provide the Service if and to the extent such failure is attributable to the lack of an Access Link, Equipment Space, Personal Computers, Air Conditioners, UPS etc. (including but not limited to) or to any deficiency or problems with the above.

5. FEES

- 5.1 As per the NKN project approval by the cabinet committee, the link provided by the NKN project is free of charge. However, in due course of time if the Government decides to charge any amount then, the applicable charges and terms & conditions shall be communicated to the User.
- 5.2 **Shifting of Last Mile Connectivity of Edge links:** In case, the "User" shifts the last mile connectivity of edge links provisioned by the PEA within the initial service period of 2 years of provisioning the Link then, the PEA shall be liable to charge the service fee for 2 years assuming the link has been live for the period of 2 years, as a substantial amount is incurred in provisioning of last mile expenditure on Network.

The provisioning of links to a new location shall be on the basis of examination of the feasibility of new location as mutually agreed on case to case basis.

Examples

Case#1: In case of a 1Gbps link of >20 Kms is being shifted in the first 6 months, the fee payable by the User to the PEA shall be Rs. 30 lakhs (Balance 1.5 year X Rs. 20 lakhs per year for 1Gbps link)

Case#2: In case of a 1Gbps link of >20 Kms is being shifted in the first 18 months, the fee payable by the User to the PEA shall be Rs. 10 lakhs (Balance 0.5 year X Rs. 20 lakhs per year for 1Gbps link).

- 5.3 In case of any changes to the standard tariffs, the PEA shall notify User in writing. For such changes to take affect under this Agreement, the PEA shall inform the User at least three (3) months prior to implementation of such changes.


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6. COMPLIANCE WITH POLICIES (Issued from Time to Time)

- 6.1 The User shall comply (and shall ensure that its officers, employees, contractors and agents comply) at all times with PEA's current versions of the Policies.
- 6.2 PEA reserves the right to amend the Policies from time to time. In case of any amendments, PEA shall notify the User of the updates and make available to the User a copy of the amended Policy or Policies (as appropriate).

7. PUBLICITY

- 7.1 Either party may make any press or other public announcement in relation to the NKN Services to Users, provided that:
- the first such announcement by the User is made in the manner and in the form which has been agreed in writing with the PEA, prior to its release;
 - no such announcement discloses any of the terms of this Agreement (including, without limitation, any financial terms), to the extent that such disclosure is agreed in advance in writing between the Parties or is permitted by Clause 15;
 - User does not use any logo or device of NKN (or any logo or device which incorporates or which is confusingly similar to any such logo or device) without PEA's prior consent.

8. ACCESS TO TRANSMISSIONS

PEA and its sub-contractors shall have the right to examine all transmissions made along NKN, where PEA has reasonable grounds to believe that such transmissions are in breach of this Agreement and are of a nature which is likely to cause harm or distress to anyone or are otherwise in breach of any law or regulation. PEA and its sub-contractors shall also have the right to remove (or otherwise cause not to be transmitted on NKN) any material which, in its reasonable opinion, is of such a nature. Such material shall be treated as the Confidential Information of the User in accordance with Clauses 15.1, 15.2 and 15.3. The right to all final decisions on access to transmissions lies with the PEA.

9. MAINTENANCE AND FAULT REPAIR OBLIGATIONS

- 9.1 It shall be the responsibility of User to notify the occurrence of fault to NKN.
- 9.2 PEA shall perform or cause to be performed under its direction all necessary repair and replacement ("Repair"), necessary to maintain the physical integrity and performance of the Network. User is prohibited from performing any repair or maintenance on the NKN Network and/ or system facilities.
- 9.3 User shall provide to PEA, or its designee, access to any facilities under User's control which are used in connection with the NKN and / or the system facilities to enable NKN Project, in its sole discretion, to perform testing, adjustments, demand or maintenance or other procedures which are necessary or desirable to manage the NKN and/ or the system facilities in accordance with **Exhibit A**.
- 9.4 With respect to the swapping, leasing, conveying, assigning or transferring of NKN's edge links, User shall require its transferees to execute NKN's then standard maintenance agreements and pay NKN's standard fees, as applicable. In such a case, the transferee shall be responsible directly to PEA for any agreements pertaining to maintenance fee and any other fee, if applicable. If the transferee fails to pay any such fee, User (transferor) shall continue to be responsible for the same.

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10. WARRANTIES

10.1 PEA warrants that:

- a) It shall, at all times exercise reasonable skill and care in providing the NKN Service.
- b) It holds and shall hold for the duration of this Agreement all licenses and authorizations as may be required to provide services to the User.

10.2 The User warrants that:

- a) It shall take all reasonable endeavors to ensure that it introduces no virus, Trojan horse or worm into NKN and follow the NKN security policies to manage the security aspects;
- b) It holds and shall hold for the duration of this Agreement all necessary licenses, consents and authorizations as may be required to provide the services to its officers, employees, agents and students;
- c) It shall provide the services and shall carry out the obligations in this Agreement in accordance with all applicable telecommunications, data protection and other laws, licenses and regulations; and
- d) It has the full right, power and authority to enter into and perform this Agreement in accordance with its terms, and such entry and performance does not and shall not violate or infringe the intellectual property or other rights of any other person.

11. LIMITATIONS OF THE SERVICE

While PEA shall use its reasonable endeavors to provide Users a continuous service, the User acknowledges and accepts there is a regular "Scheduled Maintenance Period" during which time the whole or part of the service may not be available.

12. LIABILITY

- 12.1 Neither Party excludes or limits liability to the other Party for death or personal injury caused by that Party's negligence, or for fraud.
- 12.2 Under no circumstances shall either Party be liable to the other for:
 - a) any loss or harm caused by any person using NKN;
 - b) any loss of profits, loss of savings, loss of use, loss of business, loss of opportunity, loss or spoiling of data, lost or wasted management time or time of other employees, or for any indirect, special or consequential loss, whether arising from negligence, or breach of contract, or in any other way, even if the other Party was advised of or knew of the likelihood of that loss or type of loss arising.

13. CHANGES TO SERVICES

Whenever the User identifies the need to change the services, it shall complete the template of Change Control Notice (as given in **Exhibit B**) and shall submit it to PEA. The User must provide full details of change requested and any consequential amendments to this Agreement. The proceeding details have also been prescribed under **Exhibit B**.

14. PROVISION OF CONTACT INFORMATION

All communications with the User concerning this Agreement shall be with the Technical Nodal Officer nominated by the User in writing pursuant to this Section 14. The User shall provide to PEA, the contact information for each nominated individual (*minimum details shall include name,*


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telephone number, fax number and electronic mail address - as per Exhibit D) and shall notify PEA of any changes to those individuals or their contact details as and when they occur. Notification for the purposes of this Section 14 should be sent by letter or electronic mail and should be addressed to the Nodal officer at the PEA.

15. CONFIDENTIALITY

- 15.1 Subject to Clauses 15.2 and 15.3 each Party shall:
- a) use confidential information only for the purposes of this Agreement;
 - b) disclose confidential information to a third party only with a prior written consent of the other Party (except that each Party may disclose Confidential Information to its professional advisors or auditors to the extent necessary and as set out in Clauses 15.2 and 15.3); and
 - c) ensure that any third party (other than the professional advisers or auditors of either Party) to whom confidential information is disclosed executes a confidentiality undertaking in the terms of this Clause 15.1.
- 15.2 The provisions of Clause 15.1 shall not apply to any confidential information which:
- a) is in or comes into the public domain other than by breach of Clause 15.1; or
 - b) is or has been independently generated by the recipient party or was in the possession of the recipient party prior to the date of the disclosure.
- 15.3 Each party may disclose confidential information pursuant to a statutory obligation, an order of a court of competent jurisdiction or the requirement of a competent regulatory body provided that it notifies the other Party as soon as the requirement to notify arises and shall use its reasonable endeavors to ensure that any such disclosure is made in a manner which ensures the confidentiality of the confidential information.

16. FORCE MAJEURE

Any failure of either party to perform its obligation under this Agreement shall not be a breach of this Agreement if such failure results from Acts of God, governmental action that did not result from wrong doing of the party involved in such governmental action, or labor strikes or walkouts that could not reasonably be avoided by the party subject to such labor strike or walkout. Each party shall, with the cooperation of the other, exercise reasonable efforts to mitigate the extent of a delay or a failure resulting from a *force majeure* condition and the adverse consequences thereof.

17. ARBITRATION

On all aspects where the above articles of this MoU are silent or for special cases of deviation from these articles, the decision mutually agreed upon NIC and User will be final. However, in case of any dispute relating to or arising out of the MoU, such dispute shall be resolved amicably by mutual consultations. If such resolution is not possible, then the unresolved dispute or difference shall be referred to the arbitration of a sole arbitrator to be appointed by Secretary, Deptt. of Legal Affairs, Govt. of India. The Arbitration and Conciliation Ordinance, 1996 together with any modifications or re-enactment thereof and rules framed there under, as amended from time to time shall not be applicable to such arbitration proceedings under this clause.

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18. INDEMNITY

PEA shall stand indemnified from all aspects of usage of the outcome creation of NKN including any eventual running of application covered under cyber law related crimes and for any antinational activities arising out of the usage of the Links. In case such activity occurs on the Link provided to the User, then the User shall be held responsible for the damages pertaining to the misuse of NKN Link.

19. NON SUABILITY

Neither of the co-signatories to this Agreement could be sued in any court of law in India or abroad by the other party, for the events if any party is not able to perform as per any of the stipulations of this Agreement, due to circumstances beyond their control.

20. TERMINATION OF SERVICES / AGREEMENT

20.1 In case, the "User" terminates the last mile connectivity of the links provisioned by the PEA within the initial period of 2 years of provisioning the Link then, the PEA shall be liable to charge the service fee for 2 years assuming the link has been live for the period of 2 years, as a substantial amount is incurred in provisioning of last mile expenditure on Network.

The provisioning of links to a new location shall be on the basis of examination of the feasibility of new location as mutually agreed on case to case basis.

Example: In case of a 1Gbps link of >20 Kms is being terminated in the first 6 months, the fee payable by the User to the PEA shall be Rs. 30 lakhs (Balance 1.5 year X Rs. 20 lakhs per year for 1Gbps link)

20.2 Either Party ("the first Party") may terminate this Agreement with immediate effect by giving written notice to the other ("the Second Party"), without any compensation or damages due to the second party, but without prejudice to any other rights or remedies which either Party may have, if:

- a) the second party commits a breach of this Agreement which is not capable of remedy;
- b) the second party commits a breach of this Agreement which is capable of remedy but is not remedied within three (3) months of receipt of written notice from the first Party or;
- c) if and for so long as PEA believes that the Services used by the User, or the Access Link or the Service, do not comply with any law or regulation or cause disruption or damage to NKN, or have an adverse effect on other services available to any other User or on NKN's business relationships with any other third parties, or if PEA believes that any of the above situations appear likely.

20.3 If and for so long as PEA believes that the Access Link (or the User's use of it) causes or appears likely to cause death or personal injury, or material damage to property; or

20.4 The second party's ability to survive as an independent entity is threatened or is lost owing to any reason whatsoever, including inter-alia the filing of any bankruptcy proceedings against the second party, any failure by the second party to pay any of its dues to its creditors, the institution of any winding up proceedings against the second party or the happening of any such events that are adverse to the commercial viability of the second party.


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20.5 In the event that PEA exercises its right to suspend the service pursuant to this Agreement, it shall, whenever reasonably practicable, give reasonable prior written notice of such suspension to the User, for which the notice shall state the grounds of

such suspension and its expected duration. Where any such suspension is made in accordance with this Clause 20.4, then NKN shall, where reasonably practicable use its reasonable endeavors to minimize the effect of and the duration of any such suspension.

21. CONSEQUENCES OF TERMINATION

21.1 On expiry or termination of this Agreement:


- a) the PEA shall immediately cease to provide the services and shall disconnect the Access Link or at User's option, shall permit PEA to disconnect the Access Link; and
- b) both parties shall remove any references to the availability or provision of the services on NKN from any and all publicity materials in whatever form in their possession or control (including, without limitation, any such references on the Parties respective websites) within fourteen (14) days after the effective date of termination or expiry.

21.2 Where Agreement is terminated, PEA shall not be obliged to refund or waive any fees (or any proportion of them) which has been paid or has become payable by the User.

21.3 Where this Agreement is terminated, the PEA shall reserve all rights to withdraw / remove all equipment installed at the User's site by the PEA for the implementation of the NKN project.

22. NOTICES

All notices, requests or consents provided for or permitted to be given under this Agreement shall be in writing and shall be deemed effectively given when personally delivered or mailed by pre-paid certified/registered mail, return receipt requested, addressed as follows and shall be deemed received two (2) days after mailing or on the date of delivery, if personally delivered:

To NIC at:	To User at:
National Informatics Centre (NIC), Department of Information Technology, Ministry of Communication and Information Technology, Block-A, CGO Complex, Lodi Road, New Delhi - 110003 e-Mail: piu@nic.in	 Tezpur University, Napaam, Tezpur -784 028, Sonitpur, Assam e-mail: vc@tezu.ernet.in

Any Party may change the address to which notices are to be directed by it to the other party in the manner specified above.

A notice served on a representative/nodal officer is taken as notice to that representative's party.

23. RELATIONSHIP BETWEEN THE PARTIES

The relationship between the parties is that of independent contractors, and at no time shall either party hold itself out as being the principal, agent or partner of the other.

24. GENERAL

24.1 This Agreement constitutes the entire agreement between the parties relating to the subject-matter of the Agreement. The User acknowledges and agrees that it has not relied on any statement or representation made by PEA in agreeing to enter into this Agreement. Nothing in this Clause 24.1 shall operate to limit or exclude either Party's liability for fraud.

24.2 No variation to this Agreement shall be effective unless it is in writing and signed by authorized signatories for both Parties. An addendum for such changes shall be sent to the parties to this agreement.

In Witness Whereof, the parties have agreed this Services Agreement to be executed by their duly authorized representatives to be effective as on the _____, 20__ at New Delhi.

For and on behalf of:		
Details	National Informatics Centre (NIC), DIT, MOC&IT, Block-A, CGO Complex, Lodi Road, New Delhi-110003	Tezpur University, Napaam, Tezpur – 784028, Sonitpur, Assam
Signature:		<i>A. L. Anand Sharma</i> Registrar, Tezpur University
Name:		Prof. Alak Kumar Buragohain
Designation:		Registrar
Date:		15-11-2011
Place:		Tezpur
In the Presence of:		
Signature:		<i>Dr. Nityananda Sarma</i>
Name:		DR. NITYANANDA SARMA.
Designation:		ASSOCIATE PROF., CSE
Date:		15-11-2011
Place:		Tezpur
Signature:		<i>Dr. Utpal Sharma</i>
Name:		DR. UTPAL SHARMA
Designation:		Assoc. Professor
Date:		15-11-2011
Place:		Tezpur

A. L. Anand Sharma Registrar, Tezpur University

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Exhibit A: USER'S MAINTENANCE RELATED RESPONSIBILITY

1. Any fault duration (i.e. downtime) shall be calculated from the time that fault is reported.
2. The User shall ensure availability of staff that is capable of dealing with the NKN Project related equipment/router. The period in which Institute premises is found closed or no staff is available when maintenance staff visits the premises for testing or want to test the circuit from location, shall be excluded from fault duration.
3. The User shall provide all necessary assistance and access to its facilities for preventive and corrective maintenance to PEA's maintenance staff at all times.
4. In addition to the above following shall be excluded from fault duration:
 - a) Unavailability of circuit due to power failure at User's end.
 - b) Unavailability of circuit due to mishandling of equipment or any cables attached to such equipment at User's end.
 - c) Unavailability of circuit due to fault in User's Premise equipment / network.
 - d) Unavailability of circuit due to force majeure.
 - e) Unavailability of circuit due to Planned Service Outages or Routine Maintenance.
 - f) Interruptions during any period when the User chooses / elects not to release the service for testing or repair and continues to use the service on an impaired basis.
 - g) Interruptions during any period when the User has not released the service to NKN for maintenance or for the implementation of a User service request.
 - h) Interruptions caused by the negligence of the User including provision of inaccurate information.

Procedure of Fault Booking

- a) User shall book the fault on assigned number of NKN Project related Helpdesk.
 - i. The problem related to any service outage can be reported to NKN Project related Helpdesk callout facility on all week days at any time during twenty-four (24) hours a day, seven (7) days a week. Any service outage occurred during the time mentioned above shall be reported to NKN Project's PoP on the same working day.
 - ii. The services of the engineer would be available between 9:00 am to 9:00 pm on all working days of PEA and between 9:00 am to 5:00 pm on PEA's Holidays (including Saturdays & Sundays). Additionally, services shall be provided outside these hours on call basis in case of emergency only. For, all other services it shall be attended on the next day after 9:00 am.
- b) Where the User is unable to find PEA's representative on the number assigned above, the fault can be booked on 0361-2237495, which shall work as alternate number in such emergency. Status/fault report generated by PEA (to the extent provided by the system) shall be taken, as reference if situations where there is ambiguity about the timing and nature of fault.

Escalation matrix for the faults would be as follows:

- i. Level 1: Call centre nos. as provided above
- ii. Level 2: User's Nodal Officer in each PoP
- iii. Level 3: Head / In charge of PoP in each State
- iv. Level 4: National Head Office, National Knowledge Network

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Exhibit B: CHANGE CONTROL

1. Before the Change Control Notice is finalized and signed by a nodal officer on behalf of the PEA, both Parties shall discuss in good faith the proposed changes.
2. On receipt of the Change Control Notice, PEA shall consider the change. PEA may request further information and/or clarification from the User. Once this information has been provided, PEA shall, within Twenty-One (21) Days or other agreed time, complete the Change Control Notice and provide the following information:
 - a) authority to proceed with this change or not; and
 - b) any other comments (including details of consequential amendments required to this Agreement).
3. A Change Control Notice signed by both Parties shall constitute an amendment to this Agreement.

CHANGE CONTROL NOTICE

Ref No:

Title of Change:

Date:

Details of Change:

Reasons of Change:

Description and Extent of Change:

Impact of Change:

Originator Authority:

Signature & Stamp

Comments by NKN Official:

Price:

NKN Authority:

Signature & Stamp

NKN
Confidential

NIC
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Tezpur University

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Tezpur University

Exhibit C: LIST OF EQUIPMENT TO BE SUPPLIED TO THE USER BY THE PEA

Sr. No.	Description	Quantity	Serial Number	Signature (Authorized Signatory)
01	Cisco ASR-1002 (Router With 2 Ethernet ports & 2 Fibre ports)	01	F0X1430GV4F	<i>Sarma</i> Nodal Officer NKN Project Tezpur University

Exhibit D: CONTACT INFORMATION FOR USER'S PERSONNEL (NODAL OFFICER)

Sr. No.	Name of Individual	Telephone Number	Fax Number	Email- Address
01	Dr. Nityananda Sarma	9435084063	03712-267005	nitya@tezu.ernet.in
02	Mr. Dhiraj Kumar Sarma	9435490024	03712-267005	dhiraj@tezu.ernet.in

A. W. Sarma
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National **Knowledge** Network



OBJECTIVE

NKN AIMS TO BRING TOGETHER ALL THE STAKEHOLDERS FROM SCIENCE, TECHNOLOGY, HIGHER EDUCATION, HEALTHCARE, AGRICULTURE AND GOVERNANCE TO A COMMON PLATFORM.

NKN is a revolutionary step towards creating a knowledge society without boundaries. It will provide unprecedented benefits to the knowledge community and mankind at large.

National Knowledge Network (NKN) project is aimed at establishing a strong and robust internal Indian network which will be capable of providing secure and reliable connectivity. Using NKN, all vibrant institutions with vision and passion will be able to transcend space and time limitations in accessing information and knowledge and derive the associated benefits for themselves and for the society. Establishing NKN is a significant step towards ushering in a knowledge revolution in the country with connectivity to 1500+ institutions. NKN is intended to connect all the knowledge and research institutions in the country using high bandwidth / low latency network.

Globally, frontier research and innovation are shifting towards multidisciplinary and collaborative paradigm and require substantial communication and computational power. In India, NKN with its multi-gigabit capability aims to connect all universities, research institutions, libraries, laboratories, healthcare and agricultural institutions across the country to address such paradigm shift. The leading mission oriented agencies in the fields of nuclear, space and defence research are also part of NKN. By facilitating the flow of information and knowledge, the network addresses the critical issue of access and create a new paradigm of collaboration to enrich the research efforts in the country. The network design is based on a proactive approach that takes into account the future requirements and new possibilities that this infrastructure may unfold, both in terms of usage and perceived benefits. This will bring about a knowledge revolution that will be instrumental in transforming society and promoting inclusive growth.



KEY HIGHLIGHTS

THE ARCHITECTURE OF NKN HAS BEEN DESIGNED FOR SCALABILITY AND THE NETWORK CONSISTS OF AN ULTRA HIGH SPEED CORE INHERENTLY CAPABLE OF PROGRESSIVELY MOVING WITH MULTIPLES OF 10/40/100 Gbps, COMPLEMENTED WITH A DISTRIBUTION LAYER AT APPROPRIATE SPEEDS.

The purpose of such a knowledge network goes to the very core of the country's quest for building quality institutions with requisite research facilities and create a pool of highly trained professionals

The idea of setting up the NKN was deliberated & finalised at the office of Principal Scientific Advisor (PSA) to the Government of India (GoI) and the National Knowledge Commission (NKC) after a collaborative engagement with the key stakeholders including experts, potential users, telecom service providers, educational and research institutions. The discussions resulted in a consensus for an optimal approach to be adopted for setting up such a network, to provide a unified backbone for all the sectors.

Government of India has constituted a High Level Committee (HLC) for establishment of NKN, under the Chairmanship of the PSA to GoI. National Informatics Centre has been designated as implementing agency for NKN. The vision of NKN has been translated into an action plan by the Technical Advisory Committee (TAC) set up by the HLC.

NKN was approved in March 2010 by the Cabinet with an outlay of ₹ 5990 Crores. As a forerunner of NKN Initial phase has been successfully executed by National Informatics Centre (NIC).

The architecture of NKN has been designed for reliability, availability & scalability. The network consists of an ultra-high speed core, starting with multiple 2.5/10 G and progressively moving towards 40/100 Gigabits per Second (Gbps). The core is complemented with a distribution layer covering all districts at appropriate speeds.

The participating institutions at the edge would seamlessly connect to NKN at gigabit speed. The NKN shall be a critical information infrastructure for India to evolve as a knowledge society. NKN is a significant step which will enable scientists, researchers and students from across the country to work together for advancing human development in critical and emerging areas.



ARCHITECTURE

ENCOURAGE, ENABLE, ENRICH AND EMPOWER THE USER COMMUNITY TO TEST AND IMPLEMENT INNOVATIVE IDEAS WITHOUT ANY ACCESS CONSTRAINTS

The NKN is a state-of-the-art Pan-India network. It will facilitate the development of India's information infrastructure, stimulate research, and create next generation applications and services. NKN is designed to provide high availability, Quality of Service, security and reliability

- ▶ Establishing a high-speed backbone connectivity which will enable knowledge and information sharing
- ▶ Enabling collaborative research, development and Innovation
- ▶ Facilitating advanced distance education in specialized fields such as engineering, science, medicine etc.
- ▶ Facilitating an ultra high speed backbone for e-Governance
- ▶ Facilitating integration of different sectoral networks in the field of research, education, health, commerce and governance.

CONNECTIVITY

The backbone of the network starts from 2.5 Gbps and progressively moves onto 10 Gbps connectivity between 7 Supercore (fully meshed) locations pan India. The network is further spread out through 26 Core locations with multiple of 2.5/10 Gbps partially meshed connectivity with Supercore locations. The distribution layer connects entire country to the core of the network using multiple links at speeds of 2.5/10 Gbps. **The end users are being connected upto a speed of 1 Gbps.**

The network architecture and governance structure allows users with options to connect to the distribution layer as well. NKN enables creation of Virtual Private Networks (VPN) as well for special interest groups.

NKN provides international connectivity to its users for global collaborative research. Presently, NKN is connected to Trans Eurasia Information Network (TEIN3). Similar connectivity to GLORIAD network is in the pipeline.



APPLICATIONS

Countrywide Virtual Classroom

The NKN is a platform for delivering effective distance education where teachers and students can interact in real time. This is especially significant in a country like India where access to education is limited by factors such as geography, lack of infrastructure facilities etc. The network enables co-sharing of information such as classroom lectures, presentations and handouts among different institutions.

Collaborative Research

The NKN enables collaboration among researchers from different entities like GLORIAD, TEIN3, GARUDA, CERN etc. NKN also enables sharing of scientific databases and remote access to advanced research facilities.

Virtual Library

The Virtual Library involving sharing of journals, books and research papers across different institutions, is a natural application for NKN.

Sharing of Computing Resources

High-performance computing is critical for national security, industrial productivity, and advances in science and engineering. The network enables a large number of institutions

to access high-performance computing to conduct advanced research in areas such as weather monitoring, earthquake engineering and other computationally intensive fields.

Grid Computing

The NKN has the capability to handle high bandwidth with low latency and provision to overlay grid computing. Some of the grid based applications are climate change/global warming, science projects like Large Hadron Collider (LHC) and ITER. The NKN can be the platform to realize many such innovative applications. The Garuda Grid has enhanced its power and stability by migrating to NKN.

Network Technology Test-bed

NKN provides test-bed for testing and validation of services before they are made available to the production network. NKN also provides an opportunity to test new hardware & software, vendor interoperability etc.

e-Governance

NKN acts as a super highway for integrating e-Governance infrastructure such as government data centres and networks. NKN provides bulk data transfer facility required for e-Governance applications.

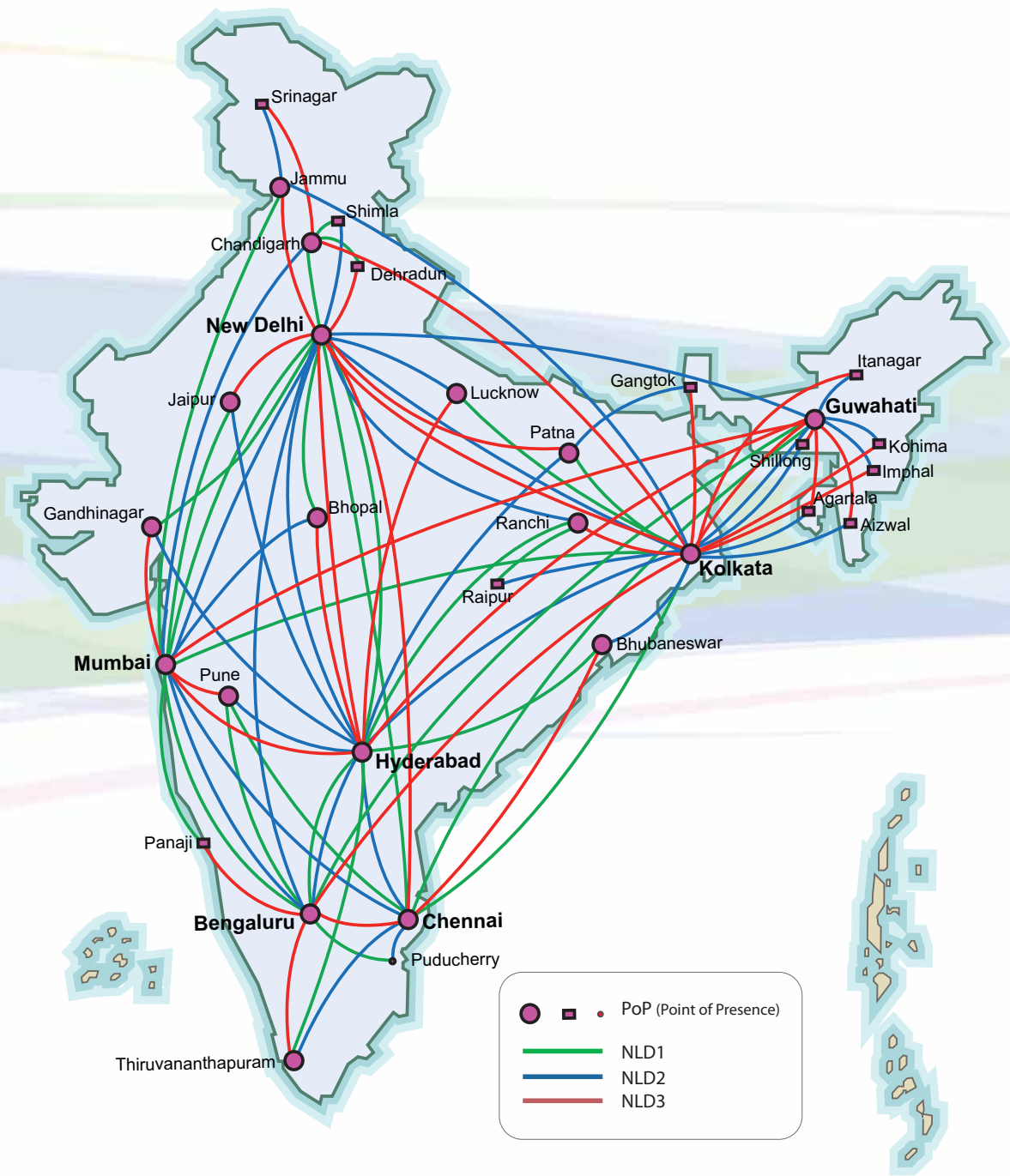
NKN Services

Generic Services: Internet, Intranet, Network Management Views, e-Mail, Messaging Gateways, Caching Gateways, Domain Name System, Web Hosting, Voice over IP, Multipoint Control Unit (MCU) Services, Video Portals, SMS Gateway, Co-Location Services, Video Streaming etc.

Community Services: Shared Storage, e-Mail List

Software Application (LISTSERV), Authentication Service, EVO, Session Initiation Protocol (SIP), Collaboration Service, Content Delivery Service, International Collaborations with EU-India Grid, Global Ring Network for Advanced Applications Development (GLORIAD) etc.

Special Services: Virtual Private Network Stitching Services [VPN@L2 (Virtual Private Wire Service / Virtual Private LAN Service), VPN@L3] etc.



Multiple 2.5/10 G Connecting all the State Capitals & Gigabit Connectivity to all the Districts



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