

VIRTUAL CLASSROOM PROJECT UNDER NATIONAL KNOWLEDGE NETWORK AT MNIT JAIPUR

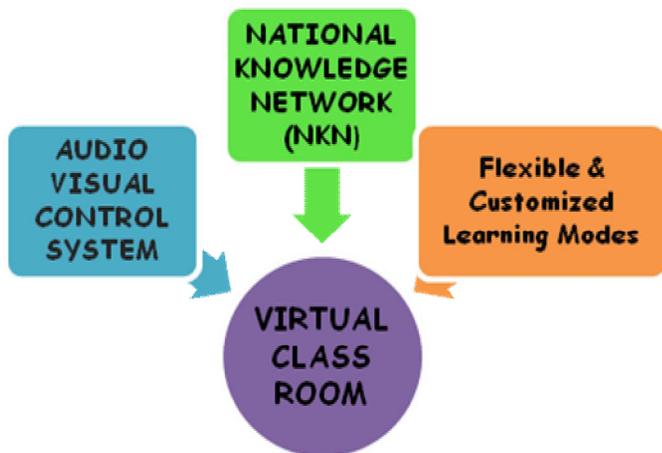


What is the need of introducing the new stuff called NKN and is it owned by any Private body or Public sector???



In order to coordinate and monitor the establishment of the National Knowledge Network, a High Level Committee was set up under the Chairmanship of Principal Scientific Adviser to the Government of India. The establishment of National Knowledge Network was approved by the Government on 25th March 2010 at an outlay of Rs. 5,990 crore. The project is to be implemented by National Informatics Centre over a period of 10 years.

The Government of India decided to set up a National Knowledge Network and an announcement to this effect was made in the Budget Speech, 2008-09. The objective of this network is to bring together all the stakeholders in Science, Technology, Higher Education, Research and Development and Governance.





What about our own Virtual Classroom???

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Let's have a look at our own Virtual classroom site at LT-13 behind canteen which has been the outcome of investment of approx 40 lacs and 7 months of tedious efforts and tie ups with NIC and HCL. It became operational in month of Feb this year.

Currently it is being utilized to attend some NIC trainings and guest lecturers from some of the IITs for M.Tech/B.Tech students of computer engineering department at our own institute.

All the installed devices are DC operated and are installed in complete Air-cooled classroom with proper earthing as well as false ceiling for support and tidiness of electrical as well as instrumentation wiring.



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What are the Technical stuff that NKN VCR deals with???

- DLINK SWITCH 16 -PORT
- BIAMP MCA 8050
- CRESTRON AV2 PROCESSOR
- DVI-RGB 150
- EXTRON ISS 506
- KRAMER DVI 6X6
- KRAMER VGA 4X4
- RGB-DVI 300
- MXP 6000 VIDEO SWITCH
- NEXIA 1
- NEXIA 2
- CNPC1 8

These are the very few of the Technical Stuff that a Virtual Classroom deals with.

The basic virtual classroom setup comprises of Document Cameras, Touch Panel for Teachers, touch Panel cum Master Controller, Starboard, Audio video Mixers, Amplifiers and Processors as well, as shown in the adjacent figures.



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In Our scenario, we have following modes of teaching:-

- 1 → LOCAL TEACHING: This mode is used for local class teaching purpose.
- 2 → DISTANCE LEARNING: This mode is used when near end student are about to listen lecture addressed by far end professor.
- 3 → DISTANCE TEACHING: This mode is used when near end professor about to address far end student for any lecture.
- 4 → DISCUSSION: This mode is used when local discussion likely to take place.

What are the different modes of Learning from which we can choose to learn via virtual Classroom???



Touch Here to continue

How do I access the virtual class console???

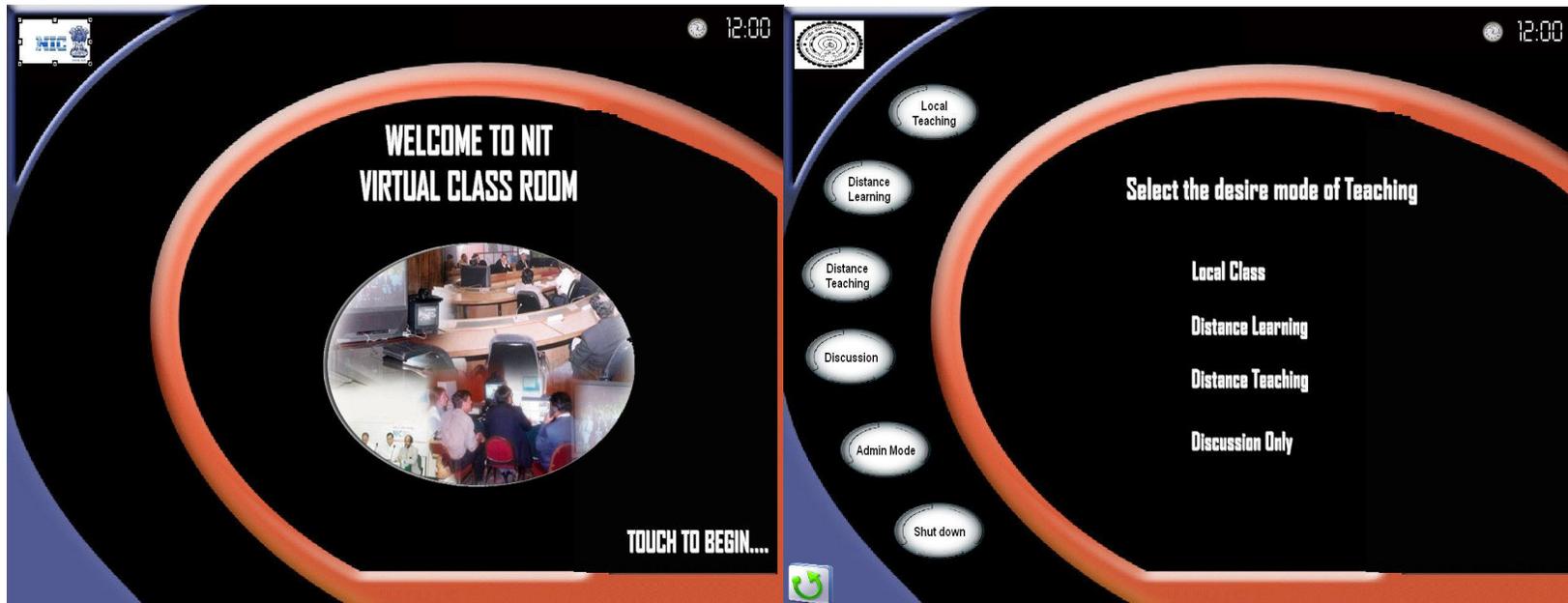
To access our virtual classroom, we are provided with a touch panel to operate, control and switch between multiple options as per our requirement.

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Touch anywhere on the screen to continue. The next page appears.

Virtual education deals with what kind of issues & how we access it???

The very first page that appears on the touch panel is as under.



- 1 → Virtual education refers to instruction in a learning environment where teacher and student are separated by time or space, or both.
- 2 → Teacher provides course content through the use of methods such as course management applications, multimedia resources, the internet, and videoconferencing.
- 3 → Students receive the content and communicate with the teacher via the same technologies.
- 4 → Live teacher instruction & feedback online that enables real-time voice interaction, whiteboard sharing, & breakout sessions to enhance a student's learning experience.
- 5 → This provides students an opportunity to interact with teacher as well as classmates by oral & written communication.



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A Separate Touch panel has precise control buttons designed for professor point of view.

WELCOME PAGE → Very 1st page appear is as follows.

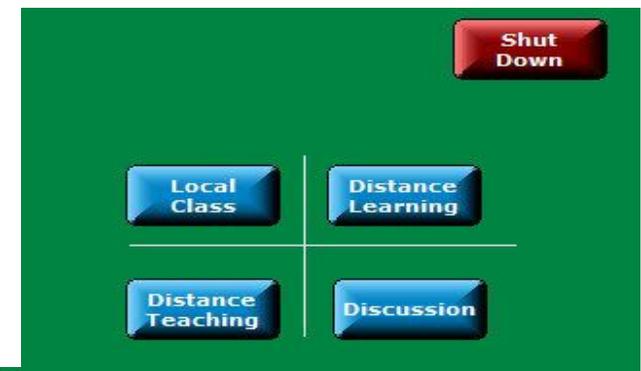
Touch anywhere on screen to start the system.



Are we having same controller cum touch panel for User as well as administrator to access and operate virtual Classroom???

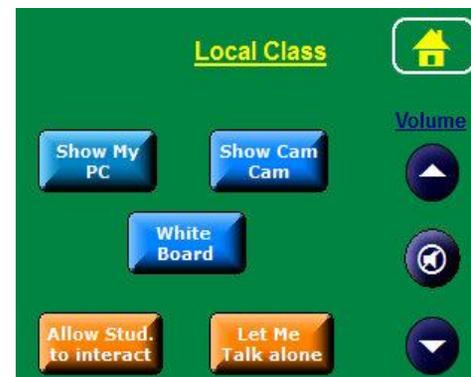
MENU PAGE → On doing so following page will appear on screen which provide user to select either of the following option

- 1) Local class : For local class teaching
- 2) Distance Learning: For receiving Lecture from far end institute.
- 3) Distance Teaching: For delivering Lecture to far end institute.
- 4) Discussion : For discussion mode only with audio part



LOCAL CLASS PAGE

On pressing Local class following page will appear.



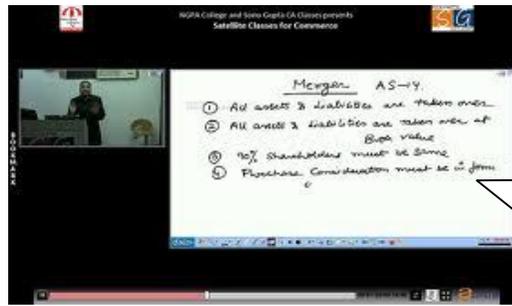
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NKN...What are its benefits???

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.

- Country wide class rooms
- Agriculture
- Telemedicine
- E - Governance
- Grid Computing and many more



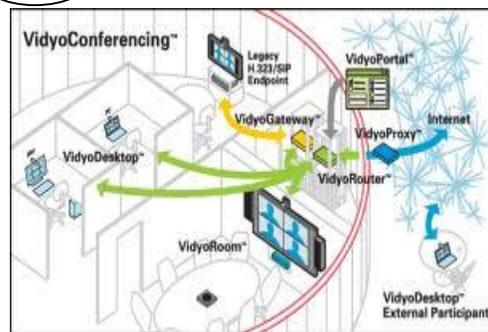
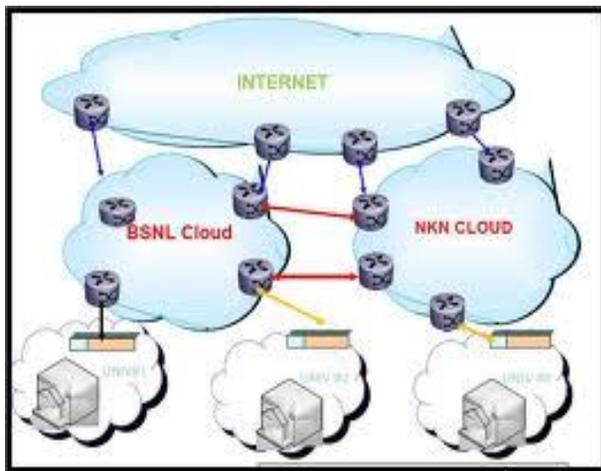
Via Virtual classroom you can share all the multimedia files as well as even handwritten notes too with a flexibility to write via touch pen too, revealing the effect of live and face to face study and teaching.

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NKN...what are the basic requirements to get its benefits?

Just it requires A dedicated Classroom well equipped with Audio Video and some Controlling & Switching devices and a dedicated NKN network with basic training to operate these devices. Technically we call it NKN-VCR i.e. Virtual Classroom over National Knowledge Network.



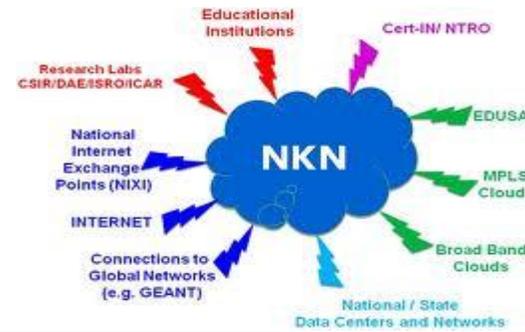
NKN possesses the essence of Cloud computing with internet and other clouds too in its background to deliver high end audio video data transmission.

By using this VIDYO Portal too you can get the benefits of NKN Virtual Classroom. It just requires a webcam and a Mic with Speaker to start with.



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What are the features and speed of this dedicated NKN network?



Network will consist of an ultra-high speed Core (multiples of 10Gbps and upwards), and over 1500 nodes. It is scalable to higher speed and more nodes also. The Core shall be complemented with a distribution layer at appropriate speeds. The participating institutions can directly or through distribution layer connect to the National Knowledge Network at speeds of 100 Mbps /1 Gbps.



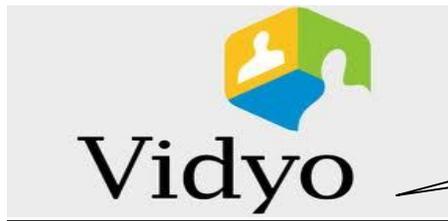
It means that until unless we don't have well equipped expensive audio video devices and dedicated classroom, we can't benefit from VCR-NKN?



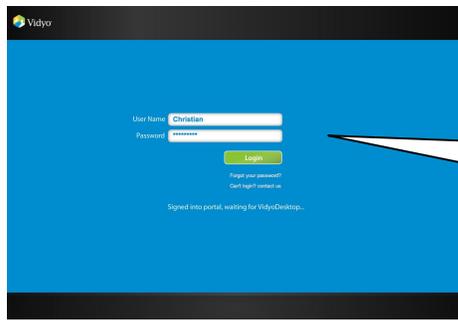
To access Virtual class , at a very initial level, your institution must be within NKN network, and after that with the coordination of NIC , your institution will be provided few accounts in the name of the faculties involved in delivering lectures, and then you would be provided a unique 8 digit VC number to dial. And after this you would be connected to Virtual class.

No, it's not like that. The minimum requirements to get its benefit require only NKN network and a multimedia enabled computing device. For example a Laptop or a PC with webcam, microphone. Rest of the part of the setup is being accomplished by a web based Software called VIDYO.

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Now what is this new stuff VIDYO all about? Is it any new device or a new technology?



The VidyoPortal is an web-based environment for accessing the functionality of the VidyoConferencingSM solution. VidyoPortal also enables any user with login credentials to initiate meetings and point-to-point calls. With VidyoConferencing, every credentialed user has a personal meeting room, and can start a meeting with a single click.

Any PC on NKN network can access VIDYO portal via web and install its initial setup and use it to browse, communicate and share data between its associated and registered users, in same way can be used to deliver remote lectures too.



Also the same setup is to be done on both the ends involving in a Virtual Class.



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How can we use it for invited remote lectures?



For enjoying the facility of remote Lecture, if our institute is within NKN network and registered under Gateway, and remote end is also fulfill the same requirement, then you have to coordinate internally among NIC NKN support team and schedule the classes with other institute you want to invite for Lectures.