

File No.NMEICT (MS)/PAB/23
Government of India
Ministry of HRD
Department of Higher Education

19th March, 2012

To

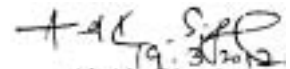
All Members of Empowered Committee of Experts
(Project Approval Board) of National Mission on
Education through Information and Communication
Technology (As per list enclosed)

Sub: Minutes of the 23rd Meeting of the Empowered Committee of Experts
(Project Approval Board) of National Mission on Education through
Information and Communication Technology (NMEICT) held on 28th
February, 2012.

Sir/Madam,

Please find enclosed herewith Minutes of the 23rd Meeting of the
Empowered Committee of Experts (Project Approval Board) of National Mission
on Education through Information and Communication Technology (NMEICT)
held on 28th February, 2012 under the Chairpersonship of Secretary,
Department of Higher Education, Ministry of Human Resource Development for
necessary action.

Yours faithfully,


(A.K. Singh)

Director (ICT)

Tel: 011-23384276

Copy to:

1. PSO to Secretary (HE)
2. PS to AS(TEL)
3. PS to JS&FA
4. US(TEL)

**Project Approval Board of National Mission on Education through Information and
Communication Technology (NMEICT)**

List of Members

S.No.	Name, Designation and Address
1.	Secretary, Department of Higher Education, Ministry of Human Resource Development, Shastri Bhawan. New Delhi <p align="right">Chairperson</p>
2.	JS & Financial Adviser, Department of Higher Education, Ministry of Human Resource Development, Shastri Bhawan, New Delhi
3.	Secretary, Planning Commission, Yojana Bhawan, New Delhi-110001
4.	Secretary, Department of Telecommunications, Sanchar Bhawan, New Delhi-110001
5.	Secretary, Department of Information Technology, Ministry of Communication and Information Technology, CGO Complex, Lodhi Road, New Delhi-110001
6.	Secretary, Department of Space, Lok Nayak Bhawan New Delhi-110001
7.	Dr. A.Mukhopadhyay Adviser/Scientist 'G', SERC Division, M/o Science & Technology, D/o Science & Technology, Technology Bhawan, New Delhi-110016
8.	Director, Indian Institute of Technology, Powai, Mumbai - 400076
9.	Director, Indian Institute of Technology, Roorkee-247667 Uttarakhand
10.	Director, Indian Institute of Technology, North Guwahati Guwahati-781039 Assam

S.No.	Name, Designation and Address
11.	Director, Indian Institute of Technology, P.O. Kharagpur -721302
12.	Director, Indian Institute of Technology, P.O. IIT Chennai Chennai -600036
13.	Director, Indian Institute of Technology, Kanpur-208016 UP
14.	Director, Indian Institute of Science, Bangalore-560012 Karnataka
15.	Director, Indian Institute of Science, Hauz Khas New Delhi-110016
16.	Vice-Chancellor, Indira Gandhi National Open University (IGNOU), Maidan Garhi, New Delhi
17.	Vice-Chancellor, North Eastern Hill University (NEHU), Shillong
18.	Vice-Chancellor, Visvesvarya Technological University, Belgaum- 590018
19.	Shri R.P. Agrawal 31 Greenwood Society Phase-II Sector –Omega I Pocket P-2 Greater Noida-201308
20.	Prof. U.B.Desai IIT Hyderabad Ordnance Factory Estate, Yeddumailaram- 502205 Hyderabad Andhra Pradesh
21.	Prof. M.K.Surappa IIT Ropar Nangal Road, Rupnagar (Ropar) Punjab 140001
22.	Prof. Sudhir K. Jain IIT Gandhinagar Room: 112A Western Laboratory Extension Chandkheda, Gandhinagar -382424 Gujarat

S.No.	Name, Designation and Address
23.	Prof.Prem K. Kalra Director , IIT Rajasthan Camp off: MBM engineering college. Residency Road, Jodhpur 342011
24.	Prof. Madhusudan Chakraborty Director, IIT Bhubaneswar Office of the Director Indian Institute of Technology Bhubaneswar Samantapuri (Rearside of Hotel Swosti Plaza) Nandan Kanan Road Bhubaneswar-751 013
25.	Prof. Anil.K.Bhowmik Indian Institute of Technology Patna Navin Government Polytechnic Campus Patliputra Colony Patna 800 013
26.	Shri Pramod Bhasin Chairman, National Association of Software and Services Companies (NASSCOM), International Youth Centre Teen Murti Marg Chanakyapuri New Delhi 110 021
27.	Dr. Ajay Khare Director School of Planning & Architecture, Transit Campus: Sports Complex, MANIT, Bhopal-462051
28.	Prof. S.G.Deshmukh Director IIIT Gwalior Morena Link Road, Gwalior 474 010
29.	Dr. M.D.Tiwari Director IIIT Allahabad Deoghat, Jhalwa Allahabad

MINUTES OF THE 23RD MEETING OF PROJECT APPROVAL BOARD OF NATIONAL MISSION ON EDUCATION THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY HELD ON 28TH FEBRUARY, 2012 AT 3.00 P.M. IN CONFERENCE ROOM (SECOND FLOOR), ROOM NO.220, A-WING, SHASTRI BHAVAN, NEW DELHI

The 23rd Meeting of the Empowered Committee of Experts (Project Approval Board) (PAB) of National Mission on Education through Information & Communication Technology was held on 28th February, 2012 at 3.00 p.m. in Conference Room (Second Floor), Room No.220, A-Wing, Shastri Bhavan, New Delhi under the Chairpersonship of Secretary, Department of Higher Education, MHRD.

The list of participants is at **Annexure**.

Shri N. K Sinha, Additional Secretary (TEL), Department of Higher Education welcomed all the participants. Thereafter, the agenda items were discussed and the following decisions were taken:

Item No.1:

Chairperson requested all the members to give their comments on the Minutes of the 22nd PAB Meeting.

Since no comments were received, the Minutes of the 22nd Meeting of the Project Approval Board held on 9th December, 2011 were confirmed.

Item No.2

The Action Taken Report on the Minutes of the 22nd Meeting of the Project Approval Board held on 9th December, 2011 was noted by the PAB. During the discussion following suggestions were made by the members of PAB:

As material created under NPTEL does not conform to the syllabi of the universities, colleges are hesitant to use it. Both UGC and AICTE should be requested to write to all universities/colleges to the extent possible to adopt it and use it. Email should be sent to 500 universities requesting the universities to write to all the colleges affiliated with them. Otherwise such a good effort is not getting full mileage.

UGC and AICTE should be asked to motivate the institutions to include material created under NPTEL in the syllabi. If this is done then students will demand it. As knowledge is more important than examination, UGC and AICTE have to say for it and this can be done with the help of UGC and AICTE.

Both UGC and AICTE should be invited in the next PAB meeting.

As NPTEL material is not in the editable form, something should be done in the NPTEL charter to give facility of editing to the colleges willing to use it. But if somebody edits it, then it should be stated that it has been modified.

- One special session of PAB should be called for review of what has been done till now and what has been prepared is useful to the students or educational institutions. PAB agreed that once the Evaluation Committee's report is available, discussion and focused attention on delivery part for e-content material can be held.

Item No. 3: Report on Development of the LCAD project sanctioned to IIT Rajasthan -Change of PI.

Mission Director reminded the PAB about the genesis of this programme. The National Apex Committee and Project Approval Board (PAB) of NMEICT in its meeting held on 1st September, 2010 had approved the proposals submitted by IIT Rajasthan towards procurement and hardware and software optimization of the Low Cost Access Device, as well as for setting up a testing lab at IIT Rajasthan for testing these devices.

Mission director also stated that Ministry has released a total of Rs.47.72 crores towards these projects, of which Rs.25.00 crores was meant for testing and development of LCAD and Rs.22.72 crores towards teacher empowerment 'A' which included procurement of 1 lakh low cost access devices. These devices were to be distributed to teachers for their field trial.

Based on information given by IIT Rajasthan, it is understood that about 600 'Aakash' LCAD were given to students for testing and feedback, which was both positive and negative. A scan of the individual student feedback forms received from IIT Rajasthan showed that, in general, students are very enthusiastic about this device, but they have also pointed out some areas where improvement is required. Negative feedback related to known issues like (a) heating of the device, (b) need for longer battery life, (c) need for capacitive instead of resistive touch screen etc. Many of these issues related to the original specs given in the tender floated by IIT Rajasthan and were not an issue with the device itself. Also, since this is an innovative device being produced for the first time in the world at such a cost, like in any new device, there will be a period where such issues will crop up and will need to be resolved. Similar issues were encountered even when the iPad was first introduced, and with improvements in subsequent releases, it has gone on to become a best seller all over the world.

Mission director informed the PAB that a meeting was held at the Ministry on November 15, 2011 to resolve the issues arising from the student feedback. The vendor and Director IIT Rajasthan were present in this meeting. As a result of discussions at this meeting, the vendor agreed to make changes including upgrading the processor from 366 MHz Arm 11 based processor to a 700 MHz Arm Cortex A8 processor, improving the firmware and replacing the battery of 2100 mAH with a battery of 3200 mAH capacity with no enhancement in cost. The minutes of this meeting reflect this agreement. However, for various reasons, after October, 2011, the project went into a tail-spin.

Now, Director, IIT Rajasthan, the PI of this project has sent a letter to the Ministry requesting that the project be shifted from IIT Rajasthan as they do not wish to carry on with this project due to some intractable problems. It is stated in the letter that this decision is being taken pursuant to a discussion in the IIT Rajasthan Board of Governors meeting.

On the issue of Item 5 of the Agenda, relating to letter from IIT Rajasthan purporting to point to a national loss to exchequer, Mission Director pointed out that vendor has agreed to accept payment in Indian Rupees at the fixed rate of Rs.2276/- per unit. Hence, this issue has no relevance any longer.

In terms of changing the PI from IIT Rajasthan to another organization, Mission Director stated that the funds belong to the Mission and hence it was not a problem to change the PI. Director, IIT Bombay stated that such changes have been done in many cases earlier too.

One possibility was to change the PI but continue with the existing LC. Opinion was sought from various bankers who have said that if all parties concerned (in this case IIT Rajasthan, vendor and new PI) agree and give an NOC to the existing bank, then the applicant name can be changed from IIT Rajasthan to new PIs' organization. The existing LC can be amended if required to add new clauses like adherence to agreed testing protocol (which was not mentioned in either the agreement or LC signed by IIT Rajasthan)

In view of the above, PAB was, inter alia, requested to consider the following:

Change of PI and transfer of money (along with interest) from IIT Rajasthan to new PI for LCAD Project.

Transfer of contract on as-is-where is basis to the new PI which would also mean that the rates for acquiring LCAD would remain the same for the new PI also.

- Authorizing new PI to enter into a new agreement (if required) with the vendor already declared successful by IIT Rajasthan through their tender process and to either open a new LC, or operate the existing LC with suitable amendments. New PI to be mandated to negotiate with the vendor to accept payment for devices at the rate which is lower of the two rates:
 - Rs.2276/- per device (arrived at through the IIT Rajasthan tender)
 - The Rupee rate arrived at through the new tender for Aakash II

IIT Rajasthan to be responsible for any action or disputes arising from the actions taken by it between the sanction of the project till the date of takeover by the new PI

- The original project continues as it is only a change of PI.

The PAB deliberated the above issues and decided that:

- PAB is not and has not earlier been part of the tendering process. What needs to be discussed and decided is that the project be transferred to a new PI as requested by Director IIT Rajasthan and the project should be closed successfully and amicably.
- As IIT Bombay is willing, the project is transferred to IIT Bombay with Prof. Phatak of IIT Bombay as the new PI.
- As requested by Prof. Phatak, all issues in this project relating to the period before takeover by IIT Bombay will remain the responsibility of IIT Rajasthan, the earlier PI. The responsibility of the new PI would be to finalize the terms of all further deliveries so as to complete the original tendered quantity of 100,000

devices keeping in mind the new specifications, to set up a rigorous testing procedure, and to ensure the project is completed successfully.

- Prof. Phatak, the new PI of this project will discuss with Prof. Rajat Moona, DG of C-DAC the possibility of C-DAC joining hands in this project as a Co-PI.
- A tripartite agreement would need to be signed prior to the taking over the project by IIT Bombay between IIT Rajasthan, the vendor (M/s Datawind) and IIT Bombay to ensure that all pending issues are closed and IIT Bombay takes the project forward with a clean slate.
- Regarding the issue of lower of two prices (Rs.2276/- and the price arrived at through the new tender), it was decided that since the new tender has not been floated yet, and is a subsequent event, the effective rate for this project will remain Rs.2276/- per device. However, IIT Bombay can negotiate with the vendor and can incorporate this clause in the new agreement.
- Regarding the issue of transfer of money from IIT Rajasthan to IIT Bombay, it was decided to take the opinion of IFD of the Ministry as to the best way of doing this incomplete compliance with all existing regulations. IFD's opinion will also be sought on the matter of transfer of agreement and LC to the new PI, IIT Bombay.

Item No.4

Progress Report of the Committee regarding continuous R&D and timely delivery of Aakash.

A high level Committee has been constituted under the Chairmanship of Secretary; Department of IT regarding continuous R&D and timely delivery of Aakash vide order no. 8(195)/ 2011-IPHW dated December 22, 2011. The Committee has so far met on 4th January, 2012, 17th January, 2012, 22nd January 2012 and 31st January, 2012. Copies of the Minutes of the meeting issued by Department of IT were seen by PAB. It was also informed that meeting has also been taken by Hon'ble Minister of Human Resource Development and Communication & IT and the copies of the minutes of the meeting issued by Department of IT were also seen by PAB. This was only to apprise PAB and no decision is required to be taken at this juncture.

Item No.5

Note on Loss to Exchequer

It was informed to PAB that IIT Rajasthan in one of correspondences has narrated that if present exchange rate of dollar, as insisted by M/s Datawind is taken into account in spite of para 3.2 of the agreement which put onus of cost of fluctuation of exchange rate on M/s Datawind, the cost of the device will be approx Rs. 2,7001-, against the market price of the device given by M/s Datawind of Rs.2,500/- per device. This may mean major concession and loss to the exchequer. It was further informed that that as per para 3.2 of the agreement, the per device cost comes to Rs.2,276/- per device, the loss to the exchequer, therefore, will be construed as per Rs.424/- per device.

It was further informed that Ministry have clearly directed to IIT Rajasthan that there are few contentious issues between IIT Rajasthan and Datawind which have bearing on the commercial agreement between the two and also on the LCAD project assigned to IIT Rajasthan and the final decision on all matters in the commercial transaction should lie with the two parties concerned(i.e. IIT Rajasthan and Datawind) and no pecuniary loss to

the exchequer(if any), directly or on account of opportunity cost should lie on Government/ Mission funds. Since this is a commercial transaction between IIT Rajasthan and Datawind, any loss to the exchequer arising from acts of omission or commission on the part of IIT Rajasthan, will be the sole responsibility of IIT Rajasthan and Government or Mission funds should not be put at stake.

It was further informed that this apprehension does not hold ground now that the vendor has agreed to accept payment @ Rs.2276/- per device (corresponding to USD 49.98 at exchange rate prevailing in April, 2011 i.e., the date of original agreement between IITR and the vendor – DATAWIND). This exchange rate fluctuations would not be able to bring about any loss to exchequer. The PAB was informed that this issue is now settled.

Item No.6

Progress on setting up of DTH Educational Channels under NME-ICT

It was informed to PAB that Satellite Communication & Navigation Programme, ISRO Bangalore vide letter No.SCNP / F.711101111 Dated December 15, 2011 has communicated that based on MHRD request, two Ku-band transponders (36X2 MHz spectrum) in INSAT/GSAT-8 is allotted to MHRD for NME-ICT programme.

It was further informed that Ministry of HRD vide order No. F.16-4912010-DL dated 24th December, 2010 constituted a 15 member Committee on Direct to Home (DTH) under the Chairmanship of Prof. S.V. Raghavan, Scientific Secretary, Office of the Principal Scientific Adviser to the Government of India. The DTH Committee in its meeting held on December 29, 2011, also co-opted few experts from Prasar Bharti, Dept. of IT & CEC (under the provisions of the MHRD order No. F.16-4912010-DL dated 24th December, 2010).

It was informed to the PAB that SAC Ahmedabad has been requested to give a plan to realize thousand channel project. This work is in progress with Department of Space. As need is to uplink the channels, two routes are available. If we want to do it immediately then teleport route is there and for this, the committee has discussed with the PSUs and asked for limited tender. TCIL and BECIL responded and TCIL turned out to be lowest. TCIL will be basically a consultant to be appointed for finding out the teleporting. They will go with normal tendering courses to find out the agency who will teleport as per the specifications. Approval of PAB was sought for going forward in this direction commercially.

The PAB noted the Progress on setting up of DTH Educational Channels under NME-ICT. PAB suggested that first NOC from I&B Ministry may be taken. As I&B Ministry does not give NOC to any other Ministry as part of their policy and the proposal has to be in a format that Ministry of I&B is able to respond. In fact, I&B Ministry should be requested to allot it to the institutions. PAB further suggested that allocation of channel may also be decided. It was suggested that CEC and IGNOU may be allocated some channels as they are already telecasting some channels. The Mission Director was authorized to talk to CEC, IGNOU and others and decide about the allocations of channels within 15 days. It was decided that the two transponders allotted to NMEICT should be made operational and nomination may be made within 90 days to take action for use of these transponders.

After detailed discussions, PAB approved the following as recommended by the DTH committee:

- (a) Regular annual payment of transponder leasing charges (for the two transponders allocated to NMEICT by the Deptt. of Space) to M/s Antrix Corporation (a PSU under Deptt. of Space) at the rate decided by the Deptt. of Space (currently Rs. 4.75 crore plus tax per transponder per year) and pro-rata payment for the 2 months of the current financial year.
- (b) Obtaining the services of M/s. Telecommunication Consultants India Limited (TCIL) a PSU under the Ministry of Communications and Information Technology for finding a Teleport Agency for engagement of up-linking 50 DTH channels of MHRD at one time payment decided by the DTH Committee through a transparent process as the PAB is not part of any tendering process.

Item No.7:

Approval of new projects recommended **by** the Standing Committee of **NMEICT**

- 7.1 Science Experiments using Computers **by** Dr. **Ajith** Kumar, Inter University, Accelerator Centre, Aruna Asaf **Ali** Marg, New Delhi
Control Number ATE24121112305, new proposal.

The item was discussed. PAB approved upto Rs.10 lakh and decided that more details need to be given.

- 7.2. Village communication network leveraging on fibre to the village

PI: Prof. Ashok Jhunjunwala

Inst: TCOE at IIT Madras and TCOE at IIT Bombay

The item was discussed. PAB approved budget of Rs. 1 crore for each of the IITs for a two year duration, coming to a total of Rs. 2 crore as recommended by the Standing Committee.

- 7.3. Enhancement **& Roadmap** to Aakash Platform

PI: Prof. Ashok Jhunjunwala

Inst: TCOE at IIT Madras

The item was discussed. PAB approved budget of Rs. 25 lakh as recommended by the Standing Committee.

- 7.4. Aakash education proposal

PI: Prof. Ashok Jhunjunwala

Inst: TCOE at IIT Madras

The item was discussed. PAB approved budget of Rs.5 crore as recommended by the Standing Committee.

For Items at 7.2, 7.3 and 7.4, PAB decided that output and outcome of both the projects needs to be recorded clearly.

**7.5. Free and Open source software for campus collaboration:
By Shri. Arun Prabhudesai from Enhance Education, Pune**

Only for information and noted by PAB.

7.6 Popular science E-books: Demystifying the Brain by Prof. Srinivasa Chakravarty, IIT Madras

Only for information and noted by PAB.

Item No.8

Approval of projects recommended by the Standing Committee for next installment

8.1 Robotics for Education - Swagat Kumar - IIT Rajasthan

The item was discussed. PAB approved second installment of Rs.100 lakhs subject to UC, statement of account, and actions items (plan for the remaining period of project) being submitted by PI.

**8.2. GNUKhata,
PI, Shri Manik Shingare and Krishnakant Mane of Master Dinanath Mangeshkar College of Arts and Commerce, Aurad, Shajani, Tq. Nilanga, Distt. Latur**

The item was discussed. PAB approved Rs,15 lakhs as recommended by the Standing Committee.

8.3. E-yantra, Dr.Kavi Arya

The item was discussed. PAB approved Rs.62 lakhs lakhs as recommended by the Standing Committee.

8.4. Virtual Labs project – IIT Delhi

Prof.Ranjan Bose of IIT-Delhi informed that for main phase lab he needs the 3rd installment to carry on the outreach activity and giving final touches on the lab. It is progressing well and the project is little ahead of the schedule. Extension of one year was also needed. For remote triggered lab as he needs to buy equipments and one third installment already released is not sufficient to buy the equipments release of 2nd installment is required immediately. Again for this one year extension is required. For the pilot phase lab also he needed extension of the time. He further intimated the PAB that on 23 January, 2012, 89 virtual labs were launched. In total under this project he has to do 80 simulation based labs, 35 remote triggered labs and 23 labs of pilot phase which have half of both types of labs. PAB suggested that AICTE should also be involved in the joint action plan to popularize the virtual labs in the engineering colleges. Help of UGC can also be taken in this regard. After deliberation PAB approved Rs.32.8 crores (3rd installment of simulation based labs and 2nd installment of remote triggered labs) as recommended by the Standing Committee.

8.5: Progress of the Quantum Nano Computing Centre project by Dr. Vishal Sahni, Dayalbagh Educational Institute, Agra.

The PI, Dr. Vishal Sahni made a brief presentation of the project. After deliberation PAB approved next installment of Rs. 1.5 crores as recommended by the Standing Committee.

8.6. Inflibnet **INDEST** resources to Universities, **IITs, NITs, IISERs** and Colleges:

8.7. National Library and Information **Services** Infrastructure for Scholarly Contents (N-LIST)

Dr. Jagadish Arora, Inflibnet, Ahmedabad informed that most of the funds required under this project are recurring expenses to be paid annually and briefed other details of the current status of the project. The item was discussed in detail. After deliberation, PAB approved Rs.59.28 crores as recommend by the Standing Committee for the renewal of subscription.

8.8 Proposal for Enhancement of Production cost for E-content Module under **NMEICT** presented by CEC (Shri **Sunil** Mehru, Shri Nagesh and his colleagues on behalf of the PI **Dr.Tilak** Kem).

It was informed to PAB that PI proposed an enhanced rate of Rs 35,000 per module of half hour video production, web supplements for the contents, and creation of the four-frame content for online streaming from the current norm of Rs. 17,500 per module. But the Standing Committee of NMEICT recommended Rs.3.1 crores to CEC for next installment at the prevailing rate of Rs.17,500.

After deliberation PAB approved Rs.3.1 crores to CEC for next installment at the prevailing rate of Rs.17,500 per module as recommended by the Standing Committee. PAB suggested that PI should complete 19 subjects in saturation mode with this and no extra money is demanded.

8.9. E-Kalpa (Curriculum development in Design) Presented by Prof. Ravi Poovaiah, **IIT** Bombay

The item was discussed. PAB approved 3rd installment of Rs. 2 crores as recommended by the Standing Committee.

8.10. FOSSEE by Prof. Prabhu Ramachandran presented by Dr. Madhu, **IIT** Bombay.

The item was discussed. PAB approved Rs.50 lakhs as recommended by the Standing Committee.

8.11. E-content generation in 17 subjects in electronics and communication using Learning-by-doing (or 'butterfly') model by prof. Sandhya Kode and Prof. Kannan Srinathan, **IIT** Hyderabad.

Deferred for the next meeting.

Item No.9

Status of Expenditure under **NMEICT**

Noted by the PAB.

Item No.10

Request for extending **VPNoBB** to Study Centers of **Dr.B.R.Ambedkar** Open University, Hyderabad

Deferred for the next meeting.

Item No.11

Issues related with **BSNL/MTNL**

Give Aakash as a bundle with connectivity to colleges not having any computer - deferred for the next meeting.

- Provide wifi modems to all colleges – As BSNL has already been intimated regarding this, PAB ratified it.

Status of migration to NKN – deferred for the next meeting.

- Status of LAN provisioning to the universities – it was intimated to PAB that for 400 nodes LAN to be established in the universities, many universities gave consent, estimates have been prepared, survey work has been done and report has been given to universities so that it approves and give 25% of its share. Since, MHRD has already paid 75% of its share to BSNL, we can request them to start the work and complete our portion of the 300 nodes and when universities give their share of money, other 100 nodes can be completed.

Mr. Anil Jain, Sr. GM, BSNL told that more than 3000 colleges have not given consent for VPNoBB connection. After deliberation, PAB approved to provide two connections for two months. Thereafter, if the colleges are willing to continue, it should be done so, otherwise it should be discontinued.

Signing of SLA with BSNL/MTNL – Deferred for the next meeting.

Item No.12

12.1 Pilot project namely, content creation (non-technical) e-content creation in the areas of economics, mathematics, commerce, history, zoology and botany

Deferred for the next meeting.

12.2. Projects awarded to IIM Ahmadabad

Deferred for the next meeting.

12.3. Content Generation For Undergraduate Courses In Agricultural Entomology - CSK Himachal Pradesh

Deferred for the next meeting.

Item No.13

Future **Roadmap** of NMEICT - Continuation in **XII** Plan Period

Deferred for the next meeting.

Item No.14

Strategy for popularization of NMEICT

Deferred for the next meeting.

Table Agenda

Item No. 1

Approval for Sitting fee to Members of DTH Committee

Deferred for the next meeting.

Item No. 2

Virtual Labs, **IIT Delhi** – Approval of extension up to **31st** March 2013

Deferred for the next meeting.

Any other Item

Item No.1

Creation of Common Computing Infrastructure
To Be Executed by NKN (NIC)

For server in 100 premier institutions, Prof. Raghvan and his team made a presentation. Prof. Huzur Saran of IIT Delhi told the PAB that objective is to be able to provide some computing recourses at the universities plus to have some central computing resources where ERP, virtual lab, etc can run in a reliable environment with disaster back up. As per the plan, NIC will take care of provisioning, security, system integration, performance and system tuning etc. NIC will do it at their two data centres at Delhi and Hyderabad. He further informed servers set up at NIC will be used exclusively for NMEICT purpose only. This service will be provided through Cloud Computing. The financial details of the project, as presented, are given below:

Approximate BoM at Delhi

Storage Boxes (500TB) With SAN switches	10 Crores
100 Server Quad Proc (≥ 8 Core) With 256GB RA Total of 3200 Cores	10 Crores
Firewall / IPS (Multi Tenant)	5 Crores*
Network Switches / SLBs	5 Crores*
Software Stack and Provisioning service NMS	5 Crores
Other Operational Costs(24X7)	5 Crores
Total Cost for the cluster	40 Crores

Approximate BoM at a University

Storage Boxes (10 -20TB) With SAN switches	20 Lacs
8 rack Server Quad Proc (≥ 8 Core) With 256GB RA Total of 64 Cores	70 Lacs
Firewall / IPS (Multi Tenant) Network Switches / SLBs Software Stack and Provisioning service NMS/ DR Suite	30 Lacs
UPS and AC costing other infra (5years)	20 Lacs
Total Cost per University	1.40 Crores

Approx Project Costing for Compute/ Storage Infrastructure.

Infrastructure at Delhi	Rs 40 Crores
Infrastructure at Hyderabad	Rs 40 Crores
Infrastructure cost @ Rs.1.40 cr. per University for 100 universities	Rs 140 Crores
Grand Total:	Rs 220 Crores

Detailed discussions were made. PAB suggested if firewall or NIC can be used then project cost will be Rs.200 crores. PAB decided Prof. Huzoor Saran IIT Delhi will be the PI for this project and approved Rs.40 crore for one data centre. PAB also decided that as a PI Prof. Huzoor Saran will submit the proposal to the Mission secretariat immediately.

The meeting ended with a Vote of Thanks to the Chair.

Attendance of the 23rd Meeting of the Project Approval Board (PAB) of the National Mission on Education through Information & Communication **Technology** (NMEICT) held on 28th December, 2011 at 3.00 p.m. under the Chairpersonship of Secretary, Department of Higher Education, Ministry of Human Resources Development In Conference Room (2nd Floor), Room No. 220 A-Wing, Department of Fertilizers, Shastri Bhawan, New Delhi

S.No.	Name, Designation and Address	Phone No., Fax and Email
1.	Ms. Vibha Puri Das Secretary (HE) MHRD, Shastri Bhawan, New Delhi	Chairperson
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