

File No.NMEICT (MS)/PAB/14

Government of India
Ministry of HRD
Department of Higher Education

National Mission on Education through Information & Communication Technology
(NMEICT) New Delhi

(Mission Secretariat)

19th March, 2010

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)

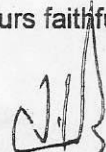
**Sub: Agenda papers for 14th Meeting of the Empowered Committee of Experts
(Project Approval Board) of National Mission on Education through
Information and Communication Technology (NMEICT) on 22nd March,
2010 at 5.00 p.m. in the Chamber of Secretary (Higher Education), First
Floor, Shastri Bhavan, New Delhi**

Sir/Madam,

Enclosed please find Agenda papers for 14th Meeting of the Empowered
Committee of Experts (Project Approval Board) of National Mission on Education
through Information and Communication Technology (NMEICT) scheduled to be held
on 22nd March, 2010 at 5.00 p.m. under the Chairpersonship of Secretary,
Department of Higher Education, Ministry of Human Resource Development in the
Chamber of Secretary (Higher Education), First Floor, Shastri Bhavan, New Delhi

2. Kindly make it convenient to attend the meeting.

Yours faithfully,



(Harvinder Singh)
Deputy Secretary (PAE) &
Nodal Officer (NMEICT)
Tel: 011-23382604

Encl: As above.

Copy to: PSO to Secretary (HE), PS to AS&FA, PS to JS(DL) and DEA(DL).

Agenda for the 14th Meeting of the Project Approval Board of National Mission on Education through Information and Communication Technology to be held on 22nd March, 2010 at 5.00 p.m. in the Chamber of Secretary (Higher Education), First Floor, Shastri Bhavan, New Delhi

Item No.	Subject
Item No.1	To confirm the Minutes of the 13 th meeting of the Project Approval Board held on 25 th February, 2010 sent vide letter No.NMEICT (MS)/PAB/13 dated 17 th March, 2010.
Item No.2	Action Taken Report on the Minutes of the 13 th Meeting of the Project Approval Board of National Mission on Education through Information and Communication Technology held on 25 th February, 2010.
Item No.3	Approval for connectivity proposal by BSNL for universities falling beyond 150 kms under NMEICT.
Item No.4	Any other item with the permission of the Chair.

Agenda Item No.1

The Minutes of the 13th meeting of the Project Approval Board held on 25th February, 2010 sent vide letter No.NMEICT (MS)/PAB/13, dated 17th March 2010, are placed below (**Appendix-I**) for kind perusal and confirmation please.

Agenda Item No.2

The Action Taken Report on the Minutes of the 13th Meeting of the Project Approval Board of National Mission on Education through Information and Communication Technology held on 25th February, 2010 is given at **Appendix-II**.

Agenda Item No.3

Approval for connectivity proposal by BSNL for universities falling beyond 150 kms under NMEICT

The issue of rates required for OF connectivity to the university if the university is more than 150 km away from the NKN POP came up for discussion in the Implementation-cum-monitoring Committee meeting held on 4.3.2010. This issue has arisen because of the Ministry's letter to BSNL where they were asked to connect universities which are within 150 kms of distance from NKN POPs presently available. The implementation-cum-monitoring Committee was of the view that it was certain that more NKN POP would come up in future. In that case the BSNL assertion that additional Rs.2 cr be paid for such universities would not be acceptable. BSNL was asked to give their proposal so that when more NKN POPs come up, such universities are migrated to NKN POP, which would probably be within 150 kms from such universities. Accordingly, the BSNL has now sent the proposal in which it has been mentioned that for universities which are more than 150 km away from present NKN POP would be charged flat rate of Rs.2 crore as is the case with universities within 150 km. However, additional annual rent of Rs.23.4 lakhs will be asked for from such universities. The BSNL also proposed that such universities will be given additional bandwidth of 155 Mbps in lieu of the additional rent paid. Payment to BSNL would continue till the such universities migrate to NKN. However, minimum commitment period for such universities would be one year. The letter of the BSNL is at **Appendix-III**. The BSNL may make it clear that the universities beyond 150 km will be connected with present NKN POP for claiming Rs.2 crore over and above annual rental of Rs.23.4 lakhs for additional connectivity of 155 Mbps from BSNL POP.

PAB may please consider the above proposal for approval.

Minutes of the 13th Meeting of the Project Approval Board of National Mission on Education through Information and Communication Technology held on 25th February, 2010 at 4.30 p.m. at Institute of Town Planners India (ITPI) [First Floor-Conference Room] , 4-A, I.P.Estate, Ring Road, New Delhi.

The 13th Meeting of the Project Approval Board of National Mission on Education through Information and Communication Technology was held on 25th February, 2010 at 4.30 p.m. at Institute of Town Planners India, 4-A, I.P.Estate, Ring Road, New Delhi under the Chairpersonship of Secretary, Department of Higher Education.

The list of members who participated in the meeting is at Annexure-I.

Mrs.Vibha Puri Das, Secretary, Department of Higher Education welcomed all the members. Thereafter, agenda items were discussed and the following decisions were taken:

Item No. 1:

Chairperson requested all the members to give their comments, if any, on the Minutes of the 12th PAB Meeting.

The following comments were made by one of the Members:

“In respect to Serial No.3 under the General Items, to the effect that under the Mission there should be a specific project to proactively identify and bring at one place what all is available and can be made available with cooperation of the national governments or institutions such as UNESCO or COL. The idea is to also proactively make available at one place what all e-learning material can be accessed free of cost by a learner in India.

The identification and bringing of information at one place should itself be identified as separate comprehensive project.”

Thereafter, the Minutes of the 12th PAB Meeting held on 3rd February, 2010 were then confirmed with the above modifications.

Item No.2

The PAB noted the Action Taken Report on all the items except Item No.6.

As regards Item No.6, the PAB was informed that the AIU could not find space for Mission Secretariat in their premises. The position would be checked up with JNU and Delhi University. Thereafter, status report will be submitted to the PAB for a decision regarding hiring of space for expanding activities of the Mission Secretariat.

Item No. 3

The PAB noted the comments of the Review Committee and thereafter the following decisions were taken:-

It was strongly felt that already developed virtual labs should be rolled out in a limited way, to begin with, without involving any private company as a partner so that the experience so gained could be used for full roll out of labs. There are three major categories of labs. These are simulation, remote triggered labs, and lab involving expensive equipment. Third category of labs can be converted in virtual mode in the form of videos and /or demonstrations in the first phase. Cost effective virtualization with a view to having roll out for quality enhancement of laboratory sessions for the students of science and engineering in the country should be the guiding principle.

An amount of Rs. 11 crores was released as the first installment for the pilot project and 23 labs have been realized and these can be candidates for attempting the delivery of both Simulation and Trigger based experiments. It was further noted that an amount of Rs. 11 crores has been released for the second phase of the pilot project. It should be utilized for the purpose of productization and rolling out some of these already developed labs and also for development of newer labs in accordance with the above mentioned guiding principle.

The approach for roll out for Trigger based experiments was discussed in detail. It was felt that there was a need to address the issues involved based on the experience obtained from the efforts of rolling out some of the labs of the pilot phase. It was, therefore, suggested that a pilot project of approximately Rs. 25 lakhs could be sanctioned for attempting productionization of some of the already developed virtual labs, their country wide roll out in a cost effective manner, including utilization of spare capacities of costly equipments in educational institutions as well as by considering time sharing or batch processing of simultaneous requests from students performing the same experiment.

Based on the servers available in premier institutions, simulation based experiment would get rolled out for the entire student population of the country in that discipline. Accordingly, an amount of Rs. 80 crores was approved for the purpose as a first phase. The second phase of the Pilot Project shall run concurrently with the main project. Based on the experience gained in the first phase, appropriate amount would be sanctioned for the second phase.

Item No. 4

The PAB noted the comments of the Review Committee and decided as follows:-

It was felt that the expert views may be invited for the project. ERP is a highly complex subject and needs to be further debated. In the next PAB meeting, experts would be invited so that feedback on the progress and innovative aspect of the project can be obtained before the final approval of the project. It was suggested that PIs may be asked to give list of experts for Peer Review and also the Standing Committee members may suggest reviewers who are expert in the area. The project may be again placed before the PAB with the comments of these reviewers for approval.

Item No. 5

The PAB discussed every part of the project. It was appreciated by PAB. However, it was suggested that efforts should be made to increase its spread so that larger teachers' population could be covered under the project. It was further suggested that all institutions involved must maximize the use of Edu SAT and terrestrial connectivity to reach a larger number of teachers. It was realized that critical mass of trainers could be created using this approach. The proposed projects have partners who would be training teachers, students and learners depending upon the reach of Edu Sat and BSNL VPN/NKN available with the institutes.

The PAB approved an amount of Rs.79.15 crores (Rupees Seventy nine crores and fifteen lakhs only) for the said project.

Item No.6

Quantum Nano-computing Virtual Centre:

(Chief Investigator: Dr. Vishal Sahni, Dayalbagh Educational Institute, Agra)

The PI briefly explained the insight into 'Quantum Computing' being a special topic and introduced some of the basic developments to PAB. The PI also highlighted that several workshops have been conducted during the pilot phase on '*Quantum and Nano*' computing with participation by experts from all over the world. It was indicated that larger group of students and faculty from India who were new to the area would be the beneficiaries.

In the ensuing discussion, the following points emerged:

1. The pilot project has brought together, through ICT, complementary research strengths of the partnering groups spread all over the country for rapid and effective growth of research in Quantum Information / Computation in the first such attempt in the country. This has helped reach critical mass of researchers and activity in the field.
2. The project should continue further to utilize the latest distance learning technologies such as videoconferencing, web-casts, e-lectures, online courses for promoting quantum-nano education and to provide opportunities to young scientists and researchers at any place and time for inclusive growth.
3. There should be continued dissemination of knowledge through ICT in Quantum-Nano Computing to Industries / Research and Development Organizations and academia through Workshops, Joint Seminars, Courses, Webcasts and research contacts and an Annual Winter School on Quantum and Nano Computing Systems with international participation such as the one organized in the pilot phase (QANSAS 2009) with participation by Nobel Laureates. This also serves as a review of the field in India and the progress made in the project.

4. A few working models, demonstrations of experiments in the field should be set up at a few labs in India so that first hand experience is available to young learners in the field in the country itself. This will inculcate greater interest in this frontier area of science and technology of strategic importance. Having missed the silicon revolution in the 70's, India should not miss the 'quantum' revolution.

The PAB after detailed deliberations approved an amount of Rs. 5 crores (Rupees Five Crores only) for the said project.

Item No. 7

The PAB noted the comments of the Review Committee and also the comments given by sub-committee consisting of 3 members. The PAB felt that at this stage project can be implemented only for a few villages. It was also discussed that if BSNL or any service provider agrees to be a partner for testing the Network for meeting the objectives of the Mission, then project could be sanctioned. This means that spectrum would be available to benchmark and calibrate Network and its components. The Network, thus created, would reduce the cost drastically hence reaching to students at low cost would be possible. In addition, with low access devices and life time connectivity at low cost, the project would significantly contribute to access to education and, therefore, partnership with service provider may be explored.

In view of high cost of the hardware (testing equipment) required for this project, it was suggested that PI could consider creating a virtual lab using this equipment and the revised proposal may be submitted to the PAB for its consideration in the next meeting.

Item No.8

**Synchronous Live Lecture Delivery System – BrihaspatiSync
Electrical Engineering Department, Indian Institute of Technology, Kanpur.**

(Investigators - Dr. Yatindra Nath Singh, Associate Professor; Amitabha Roy, PRE; Neeru Chhabra, SRE)

Total Funding Required: Rs.1.02 crore

After discussion, PAB approved the project for Rs.1.02 crore.

5 more projects approved by DIT were discussed along with this item. However, in respect of other 5 projects approved by DIT, it was suggested that these may be reviewed by the Standing Committee from the point of view of available funding and be re-submitted for approval of PAB.

Item No.9

The agenda item relating to MOU to be signed with MTNL and BSNL was discussed in details. The views expressed by DoT and BSNL were also considered. The following decisions were taken:-

1. The PAB accepted and approved the suggestion made by BSNL regarding 32 static IP addresses to be made available for each University for access from outside the network mentioned under “**Responsibilities – Network Specs**”. Since Universities would be connected to NKN PoPs, these static IPs would be given by NKN.
2. The PAB approved to adhere to the same rates as accepted earlier by MHRD under the ICT mission after ‘Due Diligence’ without mentioning the cap of NKN rates for 0-20 km slab distance between the university and NKN PoP as it would amount to a technical re-negotiation of rates as the rates quoted by BSNL for connectivity for ICT mission are having additional 10% rebate over NKN rates for slabs above 20 km circuit distance.
3. The PAB has approved the modifications in the MoU under the ‘Penalty Clause’ as per the details below:

Penalty

- Rate of penalty proposed by BSNL in draft MOU may be accepted. However, it is to be made clear that billing would be on pro-rata basis i.e. proportionate to the service made available to the consumer or user i.e., no charges for the period during which the service is not available.
 - Necessity of including DoT as a party and routing of payment through DoT or to BSNL directly may be decided at the level of Chairman, PAB i.e. Secretary (Higher Education).
4. The PAB also directed BSNL on the following:
 - To go ahead with the connectivity for the 18,000 colleges as per the list provided by the UGC without awaiting formal approval from MHRD.
 - BSNL to provide connectivity to other colleges not listed in the above said 18,000 based on the affiliation certificates, other valid credentials, etc., as given in the Minutes of the 11th PAB Meeting held on 4th December, 2009.
 - BSNL to initially bear the cost of 25% share until such time the mission/ MHRD reimburses 25% payment share to BSNL for each connection until the colleges put their share or for a period of 3 months which ever is earlier.
 5. The PAB advised MHRD / Mission Secretariat to tie up with the states on urgent basis and obtain the details of the various schemes already initiated by them under this Mission. This will ensure better co-ordination, implementation and effective utilization of funds.

6. The PAB advised that the Project Implementation Committee should meet and appraise status on the connectivity.

Item No.10

While approving the proposal the PAB advised that there should be flexibility and at this stage, there is no need to identify the areas for consultant. The advertisement should only cover the requirements of consultants in different fields without indicating the number of positions for the fields. It would be advisable to have consultants who have knowledge of ICT also. Retired professionals in the age group of 60-70 may also be considered. Candidates in service can be considered on deputation terms.

Item No.11:

Approval for pilot project-Technology for Analysis of Rare Knowledge Systems for Harmonious Youth Advancement (TARKSHYA).

The PAB noted that PI Dr. P. Ramanujan has reoriented the project specifically emphasizing on e-content. Also a revised DPR has been up-loaded by the PI.

The PAB noted that the project is a knowledge based one and this is one of the objectives of the mission and as such, the PAB approved the said project.

The PAB after deliberations approved the pilot project for Rs. 50.00 lakhs (Rupees fifty lakhs only).

Table Agenda

Item No.1

It was apprized to the PAB that the low cost device was demonstrated to the Hon'ble HRM informally and it is now desired by the Hon'ble HRM that the said device should be launched at the earliest.

In connection with the above, PAB approved 2 visits with Team of 3 officials to Taiwan so that the specifications could be frozen and prospective suppliers might be identified. The names of three officials would be decided by the Chairperson of PAB.

The meeting ended with thanks to the Chair.

Annexure-I

Attendance of the 13th Meeting of the Project Approval Board (PAB) of the National Mission on Education through Information & Communication (NMEICT) Technology held on 25th February, 2010 at 4.30 p.m. at Conference Hall, 1st Floor, Institute of Town Planners India, 4-A, Ring Road, I.P. Estate, 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	
2	Prof. Huzur Saran Deptt. Of Computer Sc. & Engg. IIT Delhi Hauz Khas, New Delhi	saran@cse.iitd.ac.in
3	Prof.Satish Kumar Dayalbagh Educational Institute Deptt. Of Physics & Comp. Science, Dayalbagh Educational Institute Dayalbagh, Agra 282 110	Satish.kumardb@gmail.com Tel: 0562 6548483 ext. 19
4	Dr. K.S. Daya Deptt. Of Physics & Comp. Sc. Dayalbagh Educational Institute Dayalbagh, Agra 282 110	sdayak@gmail.com
5	Prof. Ajay Chakraborty IIT Kharagpur	(M): 09434005863 Fax: 03222 220508 deance@high.iitkgp.ernet.in
6	Prof. P.K. Kalra IIT Rajasthan	kalra@iitk.ac.in
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8	Shri C M Markan Reader, Deptt. Of Physics & Com.Sc. Dayalbagh Educational Institute Dayalbagh, Agra 282 110	Ph: 0562 645883 x 15 cm.markan@gmail.com
9	Shri Vishal Sahni Project Coordinator Quantum-Nano Centre Faculty of Engineering Dayalbagh Educational Institute Dayalbagh, Agra 282 110	(M): 09319211231 deivishalsahni@rediffmail.com

10	Dr. Soami P Satsangee Incharge USIC Dayalbagh Educational Institute Dayalbagh, Agra 282 110	(M) 09760230620 deivsic@gmail.com
11	Mr. N.K.Sinha Joint Secretary(DL) Department of Higher Education, MHRD, Shastri Bhawan, New Delhi	23387781 nksinha.edu@nic.in
12	Mr. R.P.Agrawal C1/17, Bapa Nagar, New Delhi	23384306 (M) 9910823311 rpa1949@gmail.com
13	Dr. Krishnashree Achuthan Amrita University	(M) 09895483974 Krishna@amrita.edu
14	Mr. Harvinder Singh DS(PAE) & Nodal officer (NME-ICT) Department of Higher Education, MHRD, Shastri Bhawan, New Delhi	23382604 harvinder.edu@nic.in
15	Prof. Kannan Moudgalya IIT, Bombay	9869326979 kannan@iitb.ac.in
16	Prof. K. Mangala Sunder Professor, Department of Chemistry, and NPTEL Coordinator, Indian Institute of Technology, Madras, Chennai	9444008706 mangal@iitm.ac.in
17	Prof. Kamal Bijlani Amrita University, Kollam, Kerala	9447571000 kamal1008@gmail.com
18	Ms. Swaran Lata, Director HOD, TDIL Programme Electronics Niketan 6 CGO Complex, Lodi Road, New Delhi	24363525 slata@mit.gov.in
19	Dr. C Krishna Mohan IIT Hyderabad	ckm@iith.ac.in 09491712312
20	Shri Navoin Soi Director (F) MHRD	nsoi@nic.in 2338 9237
21	Dr. S. Prasad Director, IIT-Delhi	2659 1701
22	Prof. Prem K Kalra IIT-Delhi	pkalra@cse.iitd.ac.in
23	Prof. Ranjan Bose Professor, IIT-Delhi	9818253072
24	Prof. C S Kumar Associate Professor IIT Kharagpur	09434005819

25	Shri Rakesh Peter Amrita University Coimbatore	09495985428
26	Shri Vivek Vijayan	09447051380
27	Dr. P Ramanujan Director, C-DAC, Bangalore	rama@cdac.in 09844090188
28	Shri J S Deepak JS (T), Deptt. Of Telecommunication	Js-dot@nic.in 9868133339
29	Shri Anil Jain General Manager BSNL	akjain@bsnl.co.in 9868887007
30	Dr. P K Garg IIT Roorkee	pkjiitr@gmail.com 09412999237
31	Dr. Ratnajit Bhattacharya Associate Professor Deptt. Of ECE, IIT Guwahati	ratnajit@iitg.ernet.in 09954498116
32.	Prof. Kavi Arya Associate Professor CSE Department, IIT Bombay	kavi@csc.iitb.ac.in 098204 14114
33.	Prof. Joseph John Electrical Engg. Deptt. IIT Kanpur 208016	jjohn@iitk.ac.in 09450351874
34	Dr. Shyan Diwakar Associate Professor Amrita University Kerala 690525	shyam@amrita.edu 0476 2803116
35	Shri Madan Mohan Dy. Director General (Edn.) Planning Commission	Mmohan.edu@nic.in 23096723 23042715

**Action Taken Report on the Minutes of the 13th Meeting of the
Project Approval Board of National Mission on Education
through Information and Communication
Technology held on 25th February, 2010**

<p>Item No. 1:</p> <p>Chairperson requested all the members to give their comments, if any, on the Minutes of the 12th PAB Meeting.</p> <p>The following comments were made by one of the Members:</p> <p><i>“In respect to Serial No.3 under the General Items, to the effect that under the Mission there should be a specific project to proactively identify and bring at one place what all is available and can be made available with cooperation of the national governments or institutions such as UNESCO or COL. The idea is to also proactively make available at one place what all e-learning material can be accessed free of cost by a learner in India.</i></p> <p><i>The identification and bringing of information at one place should itself be identified as separate comprehensive project.”</i></p> <p>Thereafter, the Minutes of the 12th PAB Meeting held on 3rd February, 2010 were then confirmed with the above modifications.</p>	<p>Minutes confirmed</p>
<p>Item No.2</p> <p>The PAB noted the Action Taken Report on all the items except Item No.6.</p> <p>As regards Item No.6, the PAB was informed that the AIU could not find space for Mission Secretariat in their premises. The position would be checked up with JNU and Delhi University. Thereafter, status report will be submitted to the PAB for a decision regarding hiring of space for expanding activities of the Mission Secretariat.</p>	<p>JNU and Delhi University could not be contacted. Needful will be done.</p>

Item No. 3

The PAB noted the comments of the Review Committee and thereafter the following decisions were taken:-

It was strongly felt that already developed virtual labs should be rolled out in a limited way, to begin with, without involving any private company as a partner so that the experience so gained could be used for full roll out of labs. There are three major categories of labs. These are simulation, remote triggered labs, and lab involving expensive equipment. Third category of labs can be converted in virtual mode in the form of videos and /or demonstrations in the first phase. Cost effective virtualization with a view to having roll out for quality enhancement of laboratory sessions for the students of science and engineering in the country should be the guiding principle.

An amount of Rs. 11 crores was released as the first installment for the pilot project and 23 labs have been realized and these can be candidates for attempting the delivery of both Simulation and Trigger based experiments. It was further noted that an amount of Rs. 11 crores has been released for the second phase of the pilot project. It should be utilized for the purpose of productization and rolling out some of these already developed labs and also for development of newer labs in accordance with the above mentioned guiding principle.

The approach for roll out for Trigger based experiments was discussed in detail. It was felt that there was a need to address the issues involved based on the experience obtained from the efforts of rolling out some of the labs of the pilot phase. It was, therefore, suggested that a pilot project of approximately Rs. 25 lakhs could be sanctioned for attempting productionization of some of the already developed virtual labs, their country wide roll out in a cost effective manner, including utilization of spare capacities of costly equipments in educational institutions as well as by considering time sharing or batch processing of simultaneous requests from students performing the same experiment.

Based on the servers available in premier institutions, simulation based experiment would get rolled out for the entire student population of the country in that discipline. Accordingly, an amount of Rs. 80 crores was approved for the purpose as a first phase. The second phase of the Pilot Project shall run concurrently with the main project. Based on the experience gained in the first phase, appropriate amount would be sanctioned for the second phase.

File has been processed for release of funds by the concerned Division.

<p>Item No. 4</p> <p>The PAB noted the comments of the Review Committee and decided as follows:-</p> <p>It was felt that the expert views may be invited for the project. ERP is a highly complex subject and needs to be further debated. In the next PAB meeting, experts would be invited so that feedback on the progress and innovative aspect of the project can be obtained before the final approval of the project. It was suggested that PIs may be asked to give list of experts for Peer Review and also the Standing Committee members may suggest reviewers who are expert in the area. The project may be again placed before the PAB with the comments of these reviewers for approval.</p>	<p>Experts view have been received. Table Agenda will be put up.</p>
<p>Item No. 5</p> <p>The PAB discussed every part of the project. It was appreciated by PAB. However, it was suggested that efforts should be made to increase its spread so that larger teachers' population could be covered under the project. It was further suggested that all institutions involved must maximize the use of Edu SAT and terrestrial connectivity to reach a larger number of teachers. It was realized that critical mass of trainers could be created using this approach. The proposed projects have partners who would be training teachers, students and learners depending upon the reach of Edu Sat and BSNL VPN/NKN available with the institutes.</p> <p>The PAB approved an amount of Rs.79.15 crores (Rupees Seventy nine crores and fifteen lakhs only) for the said project.</p>	<p>File has been processed for release of funds by the concerned Division.</p>

Item No.6**Quantum Nano-computing Virtual Centre:**

(Chief Investigator: Dr. Vishal Sahni, Dayalbagh Educational Institute, Agra)

The PI briefly explained the insight into 'Quantum Computing' being a special topic and introduced some of the basic developments to PAB. The PI also highlighted that several workshops have been conducted during the pilot phase on '*Quantum and Nano*' computing with participation by experts from all over the world. It was indicated that larger group of students and faculty from India who were new to the area would be the beneficiaries.

In the ensuing discussion, the following points emerged:

1. The pilot project has brought together, through ICT, complementary research strengths of the partnering groups spread all over the country for rapid and effective growth of research in Quantum Information / Computation in the first such attempt in the country. This has helped reach critical mass of researchers and activity in the field.
2. The project should continue further to utilize the latest distance learning technologies such as videoconferencing, web-casts, e-lectures, online courses for promoting quantum-nano education and to provide opportunities to young scientists and researchers at any place and time for inclusive growth.
3. There should be continued dissemination of knowledge through ICT in Quantum-Nano Computing to Industries / Research and Development Organizations and academia through Workshops, Joint Seminars, Courses, Webcasts and research contacts and an Annual Winter School on Quantum and Nano Computing Systems with international participation such as the one organized in the pilot phase (QANSAS 2009) with participation by Nobel Laureates. This also serves as a review of the field in India and the progress made in the project.
4. A few working models, demonstrations of experiments in the field should be set up at a few labs in India so that first hand experience is available to young learners in the field in the country itself. This will inculcate greater interest in this frontier area of science and technology of strategic importance. Having missed the silicon revolution in the 70's, India should not miss the 'quantum' revolution.

The PAB after detailed deliberations approved an amount of Rs. 5 crores (Rupees Five Crores only) for the said project.

File has been processed for release of funds by the concerned Division.

<p>Item No. 7</p> <p>The PAB noted the comments of the Review Committee and also the comments given by sub-committee consisting of 3 members. The PAB felt that at this stage project can be implemented only for a few villages. It was also discussed that if BSNL or any service provider agrees to be a partner for testing the Network for meeting the objectives of the Mission, then project could be sanctioned. This means that spectrum would be available to benchmark and calibrate Network and its components. The Network, thus created, would reduce the cost drastically hence reaching to students at low cost would be possible. In addition, with low access devices and life time connectivity at low cost, the project would significantly contribute to access to education and, therefore, partnership with service provider may be explored.</p> <p>In view of high cost of the hardware (testing equipment) required for this project, it was suggested that PI could consider creating a virtual lab using this equipment and the revised proposal may be submitted to the PAB for its consideration in the next meeting.</p>	<p>Revised proposal has not yet been received.</p>
<p>Item No.8</p> <p>Synchronous Live Lecture Delivery System – BrihaspatiSync Electrical Engineering Department, Indian Institute of Technology, Kanpur.</p> <p>(Investigators - Dr. Yatindra Nath Singh, Associate Professor; Amitabha Roy, PRE; Neeru Chhabra, SRE)</p> <p>Total Funding Required: Rs.1.02 crore</p> <p>After discussion, PAB approved the project for Rs.1.02 crore.</p> <p>5 more projects approved by DIT were discussed along with this item. However, in respect of other 5 projects approved by DIT, it was suggested that these may be reviewed by the Standing Committee from the point of view of available funding and be re-submitted for approval of PAB.</p>	<p>File has been processed for release of funds by the concerned Division.</p>

Item No.9

The agenda item relating to MOU to be signed with MTNL and BSNL was discussed in details. The views expressed by DoT and BSNL were also considered. The following decisions were taken:-

7. The PAB accepted and approved the suggestion made by BSNL regarding 32 static IP addresses to be made available for each University for access from outside the network mentioned under “**Responsibilities – Network Specs**”. Since Universities would be connected to NKN PoPs, these static IPs would be given by NKN.
8. The PAB approved to adhere to the same rates as accepted earlier by MHRD under the ICT mission after ‘Due Diligence’ without mentioning the cap of NKN rates for 0-20 km slab distance between the university and NKN PoP as it would amount to a technical re-negotiation of rates as the rates quoted by BSNL for connectivity for ICT mission are having additional 10% rebate over NKN rates for slabs above 20 km circuit distance.
9. The PAB has approved the modifications in the MoU under the ‘Penalty Clause’ as per the details below:

Penalty

- Rate of penalty proposed by BSNL in draft MOU may be accepted. However, it is to be made clear that billing would be on pro-rata basis i.e. proportionate to the service made available to the consumer or user i.e., no charges for the period during which the service is not available.
- Necessity of including DoT as a party and routing of payment through DoT or to BSNL directly may be decided at the level of Chairman, PAB i.e. Secretary (Higher Education).

MOU has been vetted by M/o Law and Justice, Deptt of Legal Affiars and is under submission for approval of competent authority.

<p>10. The PAB also directed BSNL on the following:</p> <ul style="list-style-type: none"> • To go ahead with the connectivity for the 18,000 colleges as per the list provided by the UGC without awaiting formal approval from MHRD. • BSNL to provide connectivity to other colleges not listed in the above said 18,000 based on the affiliation certificates, other valid credentials, etc., as given in the Minutes of the 11th PAB Meeting held on 4th December, 2009. • BSNL to initially bear the cost of 25% share until such time the mission/ MHRD reimburses 25% payment share to BSNL for each connection until the colleges put their share or for a period of 3 months which ever is earlier. <p>11. The PAB advised MHRD / Mission Secretariat to tie up with the states on urgent basis and obtain the details of the various schemes already initiated by them under this Mission. This will ensure better co-ordination, implementation and effective utilization of funds.</p> <p>12. The PAB advised that the Project Implementation Committee should meet and appraise status on the connectivity.</p>	
<p>Item No.10</p> <p>While approving the proposal the PAB advised that there should be flexibility and at this stage, there is no need to identify the areas for consultant. The advertisement should only cover the requirements of consultants in different fields without indicating the number of positions for the fields. It would be advisable to have consultants who have knowledge of ICT also. Retired professionals in the age group of 60-70 may also be considered. Candidates in service can be considered on deputation terms.</p>	<p>Noted for compliance.</p>

<p>Item No.11:</p> <p>Approval for pilot project-Technology for Analysis of Rare Knowledge Systems for Harmonious Youth Advancement (TARKSHYA).</p> <p>The PAB noted that PI Dr. P. Ramanujan has reoriented the project specifically emphasizing on e-content. Also a revised DPR has been up-loaded by the PI.</p> <p>The PAB noted that the project is a knowledge based one and this is one of the objectives of the mission and as such, the PAB approved the said project.</p> <p>The PAB after deliberations approved the pilot project for Rs. 50.00 lakhs (Rupees fifty lakhs only).</p>	<p>File has been processed for release of funds by the concerned Division.</p>
<p>Table Agenda</p> <p>Item No.1</p> <p>It was apprized to the PAB that the low cost device was demonstrated to the Hon'ble HRM informally and it is now desired by the Hon'ble HRM that the said device should be launched at the earliest.</p> <p>In connection with the above, PAB approved 2 visits with Team of 3 officials to Taiwan so that the specifications could be frozen and prospective suppliers might be identified. The names of three officials would be decided by the Chairperson of PAB.</p>	<p>Visit will be undertaken in the month of April, 2010.</p>

Appendix-III

(Will be placed in the Meeting)

Table Agenda

Item No.1: