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**Government of India, Ministry of Culture  
National Mission on Libraries**

**Minutes of the fifth meeting of the Advisory Committee of National Virtual Library of India (NVLI) under National Mission on Libraries (NML) held on 20<sup>th</sup> September 2016 at 10.00 AM in the Chamber of Secretary (Culture), Shastri Bhawan, New Delhi - 110 001.**

**Following members were present in the meeting :**

1	Shri N. K Sinha, Secretary, Ministry of Culture	<b>Chairman</b>
2	Shri Pankaj Rag, Joint Secretary (Libraries), Ministry of Culture & Mission Director, National Mission on Libraries	<b>Member Convener</b>
3	Dr. Arun Kumar Chakraborty, Director General, RRRLF & Additional Mission Director, NML	Present
4	Ms. Deepika Pokharna, Director (Libraries), Ministry of Culture	Present
5	Shri Arun Gupta, Director (Finance), Ministry of Culture	Present
6	Prof. S. V. Raghavan, Department of CSE, IIT Madras	Present thru Skype
7	Prof. MS Ananth, Former Director, IIT Madras	Present thru Skype
8	Prof. Mangala Sunder Krishnan, Department of Chemistry, IIT Madras	Present
9	Prof. Deepak B. Phatak, Professor, Department of CSE, IIT Bombay	Present thru Skype
10	Prof. Kannan M Moudgalya, Dept. of Chemical Engineering, IIT Bombay	Present thru Skype

**Following members/officials could not attend the meeting due to other pre-occupation:**

1	Prof. Parthasarathi Mukhopadhyay, HoD, Department of LIS, University of Kalyani, West Bengal
2	Prof. Uma Kanjilal, Department of LIS, School of Social Sciences, IGNOU
3	Shri R. S. Mani, Senior Technical Director, NIC

At the very outset Secretary (Culture) welcomed all the members present in the meeting as well as members present through Skype. Thereafter the following agenda items were taken up for deliberation.

## Item 1: Setting up of Cloud Space of 2 Petabyte for NVLI

NKN, as Co-PI to IIT, Bombay was entrusted with the work of providing Cloud Space for NVLI. They were required to sign an MoU with IIT, Bombay for the purpose which they have not done till date. Mr. R.S. Mani had been reminded for this so many times but no progress has been made in this direction. As demo of NVLI prototype has been already done and contents are to be filled in various containers /bubble, hence, it is required to decide whether the work may be entrusted to IIT, Bombay the PI in place of NKN/NIC – the co-PI.

Chairman requested Prof. Phatak to make presentation.

### Prof Phatak in his presentation highlighted the following:

- Mini-clouds at CDAC and IIT Bombay
- IITB cloud to be used for pilot launch
- About Rs.4.00 Crore each + staff
- Cloud with 1 PB storage at NKN
- About Rs.17.00 Crore (equipment + staff)
- Discussions initiated on end-target storage
- Estimates ranged between 100 - 200 PB
- NKN Started initial planning
- Site identified,
- Several details worked out
- Approach is to be finalized
- 2 PB server set up was delayed
- Mini-cloud at IIT Bombay partly set up
- Being built using rate contract + special tender
- commodity hardware and open source software
- 25 Compute servers
- ~ 1200 VMs, 25 TB SSDs, 600 TB storage disks
- IIT Bombay is including all cloud related items in our rate contract, to be operational on 1<sup>st</sup> November
- Most competitive prices, easy process for PO
- Two phase approach
- Phase I (next 3 months)
- Expand the mini-cloud to add 800 TB (total 1.2 PB)
- Estimated cost Rs.2.8 Crore
- Phase II (Next 6 to 7 months)
- Duplicate the complete setup, and expand
- Estimated cost Rs.6.75 Crores
- Double the space, at roughly the same cost
- Phase I (next 3 months)
- Expand to add 800 TB (total 1.2 PB)- Rs.2.80 Crores
- Phase II (Next 6 to 7 months)
- Duplicate the setup (Add 1.2 TB) – Rs.6.75 Crores
- Double the space, at roughly the same cost (Rs.11.46 Crores)
- Including Institute overheads

- Additional manpower + contingency costs
- Estimated Rs.2.00 Crores for 3 years + Rs.0.4.00 Crores (Rs.2.4 Crores)
- **Total budget estimate Rs.11.46 + Rs.2.4 = Rs.13.86 Crores**

Prof. D. Phatak, IIT Bombay, Mumbai also mentioned that till date NIC-NKN has not signed MoU with IIT Mumbai, so no progress could be made in regards to setting-up of cloud IIT Bombay, Mumbai.

After the presentation Chairman requested members to comment on the presentation as well as overall requirement of the project.

Prof. S.V. Raghavan has discussed many issues and after deliberations and discussions Prof. Raghavan opined that NKN-NIC / DeITY etc. may take up the project in later stage when MoC Big Data centre would be established in IGNC campus or any other campus identified by the Ministry.

Under these circumstances Prof. Raghavan opined that proposal for establishing cloud server by IIT Mumbai would be viable option as it will also enable people to work in multi institutional project and users will be well conversant with the system and it would create IT culture to all kinds of users. IIT Mumbai has a capacity and willing to invest their time and expertise, so the project should be entrusted to IIT Mumbai which is also Principal investigator of the NVLI project. This will ensure a good learning curve in running the cloud and various experimentations. These experiences would be useful when the large data centre is brought up for NVLI.

Professor Mangala Sunder also said this project is viable and it may be entrusted to IIT Mumbai as part of NVLI project as the amount is already earmarked for NKN-NIC and same amount would be required by IIT Mumbai and would put up atleast three petabyte space.

Prof. M.S. Ananth and Prof. Kannan Moudgalya also opined the same agreeing with Prof. Mangla Sundaran and Prof. Raghavan.

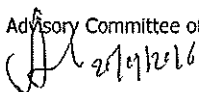
**ITEM 2: Marking of budget of Rs.17.50 crores meant for development of Cloud Space from NKN to IIT, Bombay within the overall budget estimate of Rs.7234.89 Lakh.**

Prof. Phatak also mentioned that mini cloud would be established in IGNOU. Prof. Phatak assured Chairman in response to his query that atleast three peta byte space would be available for usage within the same budget provision.

After discussions and deliberations Chairman concluded stating that IIT Mumbai would create three peta byte usable space, where initially in the project NIC-NKN had projected two peta byte space. Professor Phatak also clarified in response to Chairman's query regarding Service Level Agreement (SLA)" that MoU would be signed with the vendor/ organizations which would provide the Cloud.

Thus the committee opined that IIT Bombay is providing similar or better/ improved configuration of cloud in less cost and is also ready to meet agreeable "Service Level Agreement (SLA.). It was decided that within the approved estimated cost of Rs.17.50 crores meant for development of cloud space of 2 petabyte, be utilized by IIT Bombay for developing cloud space of three peta byte (usable space) in IIT Bombay.

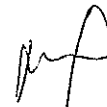
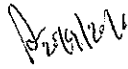
Since the cloud is need to be set-up within a period of six months the projected requirement of funds for first year will go up accordingly. Thus the modified financial phasing would be as follows:



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Organization/ year	Year 1	Year 2	Year 3	Total (Rs.) in Lakhs
IIT Bombay	1138.42	606.84	610.82	2356.08
CDAC, Pune	945.26	613.37	557.18	2115.81
IGNOU/ RRRLF	396.96	293.84	322.20	1013.00
IIT Bombay (for Cloud Space)	900.00	610.00	240.00	1750.00
<b>Total</b>	<b>3380.64</b>	<b>2124.05</b>	<b>1730.20</b>	<b>7234.89</b>

Chairman thanked all members.



**(Pankaj Rag)**  
Member Secretary, 'Mission  
Director, NML  
Ministry of Culture