

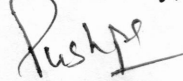
F. No. 16-01/2020-TEL
Government of India
Ministry of Human Resource Development
Department of Higher Education
(TEL Division)

408-C Shastri Bhawan, New Delhi
Dated 21st Feb. 2020

Subject: Minutes of the Review Meeting on Education Cloud "BAADAL" held on 19th
Feb. 2020- regarding

The undersigned is directed to forward herewith the minutes of the Review Meeting on Education Cloud "BAADAL" held on 19th Feb. 2020 under the Chairmanship of Additional Secretary (TE), M/o HRD, Shastri Bhawan, New Delhi for information and further necessary action.

Yours faithfully,


(Pushpa Gautam)

Under Secretary to the Government of India
Tele: 23385459

To

Prof. Huzur Saran
PI, BAADAL Project
Indian Institute of Technology, Delhi
Hauz Khas, New Delhi-110016

Copy to:

1. PS to AS(TE), M/o HRD
2. PS to DS (ICT), M/o HRD
3. Ms. Nirmal, Marwah, Joint Director, ERNET India, Ministry of IT
4. Sh. Praveen Rai, Consultant, NMEICT, MHRD



Minutes of the Review Meeting on Education Cloud 'Baadal' held on 19th February 2020

Dated:21.02.2020

Additional Secretary (TE), Ministry of Human Resource Development took a review meeting on Education Cloud 'Baadal' a project under NMEICT scheme at 11.00 am on 19.02.2020 in his Chamber. List of participants is enclosed.

The PI, Prof. Huzur Saran briefly presented the background (Annexure-I) of the project Baadal. As on date as per the annexure enclosed there is about 50% usage (Annexure-II) of the existing cloud infrastructure. At present, it is co-located at NIC data center, Shastri Park. Since the development stage is over, the issue now involved is regarding operational responsibilities for which a professional agency other than IIT Delhi is to be identified. Currently there is 3 fulltime staff involved in managing who are also likely to leave if there is no extension to the project. To the query of AS(TE) about the life of Baadal, PI informed that the AMC can be further extended by two more years and there is a possibility of further 2 to 3 years life, if the hardware is maintained properly. After discussing the existing position and future possibility, the following action points emerged:

1. Since the current NIC firewall is inconsistent with educational requirement, we may need to consider shifting the hardware from Shastri Park and re-locating it elsewhere. It then emerged that there is a possibility of space being made available in Delhi University which is already implementing the ERP project of NMEICT. MHRD may therefore request the PI, ERP for accommodating Baadal.
2. MHRD has released the Rs.17 crore in NMEICT Ph-I. Utilization certificate is pending for financial year 2016-17, 2017-18, 2018-19 and 2019-2020. MHRD may pursue with PI, Baadal to get the UCs from project PI.
3. In view of the fact that no cost is to be paid for hosting on Baadal and it can still be utilized for hosting many of the NMEICT projects it could be worth reviving by taking an AMC for hardware. In view of the revival, the operation and management needs to be managed by professional agency. Detailed proposal will be worked out.
4. Mrs. Nirmal Marwah, Joint Director, ERNET India, Meity has explained about ERNET and its services provided to Academic and Research institutions of the country. Specially eduroam, Domain Registration, Email, Internet on Things, 5G and also briefed that they are working on emerging technology such as Virtual Reality and Argument Reality. ERNET has submitted a proposal to IIT Delhi to work as a professional agency for operational & maintenance and helpdesk.
5. PI, Baadal would continue to offer technical expertise in case of any issue faced in the operation of Baadal. Since Baadal has been developed through open source virtualization technology and the services provided by Baadal are being used by higher institutions all over India, PI, Baadal may be requested to submit a proposal for revival of Baadal on the above lines with adequate (a) Justification for security, ownership of data, uniform standards, access, redundancy etc. (b) Policy for its operation on hosting, approval system (which institution to be given space etc.), (c) Operation & Maintenance (d) Review parameters and Escalation matrix.

List of Participants of Review Meeting of Baadal held on 19th February 2020

1. Dr. Rakesh Sarwal, Additional Secretary (TE), MHRD
2. Prof. Huzur Saran, Indian Institute of Technology, Delhi
3. Mrs Malathi Narayanan, Deputy Secretary (TEL), MHRD
4. Ms. Pushpa Gautam, Under Secretary (TEL), MHRD
5. Ms. Nirmal Marwah, Joint Director, ERNET, Ministry of IT
6. Shri Praveen Rai, Consultant, NMEICT, MHRD
7. Shri Amit Sharma, Consultant, NMEICT, MHRD
8. Shri Sandeep Kumar, Sr. System Analyst, NMEICT, MHRD

Project title: Creation of Common Computing Infrastructure**Project objectives:**

- Setup of Cloud based Services on open source in a phased manner.
- Develop a framework for managing the cloud services in a scalable manner.
- Phase II: Extend the Framework and formulate a general prototype academic cloud solution for at the University/Institute Level.

PI details: Prof. Huzur Saran, Dept. of CS & Engineering, IIT, Delhi

Project Start date and duration: 19 April 2012 - 31 March 2020

Target: Develop the cloud computing framework and formulate a general prototype academic cloud solution on open source.

Achievement:

- A Cloud computing platform, better known as Baadal (<https://baadal.nmeict.in/>)
- It is an open source academic cloud with prime focus to provide Infrastructure as a service to various central organizations across the country.
- Currently, 213 virtual machines of 27 institutions are running on Baadal framework.

Funds released so far in current phase as well as total in NMEICT (Ph-I and Ph-II):
Rs.17 crore

Infrastructure details:**Server:**

Product Description	Quantity
Computing System	1
Blade server Chassis	20
Blade Server	160
Fabric Interconnect with UCS Manager	2

Storage: Appx. 220 TB of virtualized storage

Annexure -II

Name of institution	VM	RAM (GB)	CPU	Extra storage
Aviiew	36	1480	304	20480
Inflibnet	33	860	394	32768
Consortium for Educational Communication	2	48	32	15360
Ministry of Human Resource Development	2	4	4	0
IIT, Kanpur	6	176	80	500
Tamil Nadu Agricultural University	9	128	120	600
Tamil Nadu V Animal Sciences University	6	40	36	500
Dayalbagh Educational Institute	11	232	160	20480
IIT Delhi	19	532	274	4096
University of Hyderabad	14	153	105	0
University of Jammu	6	38.25	39	0
Central University of Tamil Nadu	4	56	40	0
MOOC, IITB	23	440	194	2048
Central University of Haryana	4	48.25	49	250
Central University of Punjab	3	40	40	0
Delhi University	7	64	64	500
KLE Technological University	2	32	32	0
IIITM, Gwalior	2	16	8	0
IISc	2	16	8	0
Amrita Vishwa Vidyapeetham, Coimbatore	1	4	4	0
Central University of Gujrat	2	8	4	300
Government Engineering College, Hassan	3	36	36	300
Virtual Labs	11	7	11	0
Mahatma Gandhi Central University	1	16	16	250
Association of Indian Universities	1	16	16	0
Akole Taluka Education Society	1	4	4	0
NITTAR, Chennai	2	32	32	1024
Total	213	4526.5	2106	99456