

Ministry of Human Resource Development
Department of Higher Education

Committee on DTH

The DTH Committee, constituted by the MHRD under NME-ICT project held the 9th meeting at 11:00 Hrs, on July 17, 2013 at Room No.112 C-wing, Shastri Bhawan, New Delhi.

The following members attended the meeting –

- a) Prof. S.V. Raghavan, Scientific Secretary, Office of the Principal Scientific Adviser to the Government of India and Chairman, DTH Committee
- b) Mr. Amit Khare, Mission Director, NMEICT & Joint Secretary (TEL), MHRD, New Delhi.
- c) Mr. K. Sethuraman, Asoc. Director, ISRO, Bangalore.
- d) Prof. K. Mangala Sunder, Head Dept. of Chemistry, IIT Madras.
- e) Prof. Y N Singh, IIT Kanpur
- f) Prof A K Bakhshi, VC, UP Rajarshi Tandon Open University
- g) Mr. Ravi Saksena, Ex SAC/ISRO
- h) Dr. Ramanujan, Associate Director, C-DAC, Bangalore.
- i) Mr. Rakesh Sharma , EMPC, IGNOU, Member Invitee
- j) Mr. Kannan Krishnamurti, Exec. Producer , NKN & NPTEL, Member Invitee
- k) Mr. Vinod Mago, Engineer-In-Charge, EMPC, IGNOU, New Delhi, Member Invitee.
- l) Mr. Pradeep Kaul, Sr. Consultant, NMEICT, MHRD, New Delhi, Convener, DTH Committee.

The remaining Committee members, due to their pre occupation, could not attend the meeting.

1. Mr. Amit Khare JS [TEL] welcomed the members to the 9th DTH meeting.
2. Prof Raghavan expressed that he has been kept informed with the activities taking place on DTH programme, as and when the DTH committee has met and is happy with the progress made so far. He said looking at the magnitude of the DTH programme of MHRD, the launch of 50 channels is going to be the game changer in the education system in the country. DTH by nature provides equitable access and excellence simultaneously by making educational content available 24X7, that too free of cost to the students. We intend to reach the unreached and bridge the digital divide in the process.
3. Prof. Raghavan expressed that issues concerning NOC for seeking WPC/SACFA/NOCC clearances from MC&IT is likely to be sorted out soon. Thereafter we should ensure that we take minimum possible time to launch 50 DTH channels. This is all the more essential because the satellite transponders sanctioned to MHRD by DOS needs to be utilised at the earliest. Prof Raghavan therefore declared that we all should work now for this and should ensure that 50 DTH channels are launched as early as possible preferably on January 26th 2014.
4. Mr. Amit Khare expressed that it is important that we involve all the stake holders, such as UGC, AICTE, CU's, IIT's, NIC's, and state universities, in creation of content for the DTH.

The DTH is likely to bring in so much of benefits along with other ICT projects of the NMEICT. Therefore the education regulators in higher education should now ensure that the DTH & ICT projects are used in a big way. The Regulators may further direct the institutions under them to utilise such ICT resources as much as possible and to have a mix and match of ICT content with the conventional education in the country. To begin with, we may at least assign 15% of the teaching learning through DTH and ICT modes in higher education and gradually increase the percentage.

5. Prof Raghavan requested Prof. K. Mangala Sunder, Head Dept. of Chemistry, IIT Madras and the Coordinator Teaching End Expert Committee (TEEC), (constituted by the Director, IIT Madras) to present the progress made by the TEEC. Prof. Sunder said that so far, the TEEC has met five times and the Committee has completed the job and has finalised the RFP and specifications for establishment of TE's. After seeking approval of the DTH Committee, the IIT Madras shall start tender process and shall publish tender notice, for supply of equipment etc., for MHRD DTH 153 TE's, in national dailies etc. He added the Chairman, DTH Committee, has in person and through video conference also attended the TEEC meetings and has guided the committee throughout. Prof Sunder thanked the Chairman, DTH committee and the TEEC members for providing critical inputs and the academic debate that contributed in finalisation of TE package.
6. Prof Sunder said the Committee felt, for launch of 50 educational DTH channels, at present, it is necessary to establish at least 153 Teaching Ends (TE), at premier institutes, under Central & State Governments. However, the selection of TE'S should preferably and uniformly spread across the country.
7. Mr. Pradeep Kaul, DTH Convener on behalf of the TEEC was requested to make the presentation and brief the members present about the salient features and criteria chosen by the TEEC in design of a standard equipment package.
8. Mr. Kaul informed that:
 - a) The basis for the TEEC work was from the initial equipment package design presented during 25th meeting of the Project Approval Board (PAB), held on 6th November 2012, at MHRD wherein a preliminary equipment package was required to be presented to arrive at the budget of DTH programme during XIIth Plan.
 - b) The committee has further drawn an equipment package, taking care that it constitutes optimal functional equipment needed to deliver what is expected of a TE; the package is chosen out of latest equipment available in the industry and such equipment are available from a number of manufacturers/vendors. The committee further recommends following a central purchase process to benefit from the bulk order.
 - c) Design of a typical Teaching End (TE) comprises of a studio and an associated control room. The space (in semi finished or raw form) is expected to be provided by selected Institute(s). Each of the TE shall have facility for Acquisition, Recording, Editing, e-content generation, transmitting signal through optical fiber to MHRD designated Teleport/ Earth Station through NKN & NME-ICT lease lines. Each of the TE in terms of equipment and human resource for daily operation are required to provide live content for 2:40 to 3:00 hours a day. Besides these activities the TE shall provide support to Teachers for creation

of PowerPoint, graphics, animation and other material required for live delivery. The teacher shall use the material such as Text, PowerPoint, graphics, animation, Internet etc as an aid during the delivery of live Telecast. Care has been taken in selection of equipment package so that a teacher, who is expected to be familiar with ICT, shall further require only minimum learning time, for delivery of live lecture. After every delivery of lecture by the teacher, students across the country shall ask Live questions through video conferencing (Skype & A-VIEW, etc) mobile, landline, SMS's, e-mails et., and the queries shall be made available to the teacher in studio and the teacher shall answer such questions one by one. The teacher's live delivery and interaction shall be recorded as well at each TE. The TE's shall further generate e-content out of the recorded lectures, teaching material provided by the teacher and a Template provided by the DTH committee. The TEEC has designed the equipped taking all above in mind and the committee has further written detailed specifications for each of the equipment in the RFP.

- d) The TEEC Committee felt that for establishment TE's we need to connect all TE's to nearby NKN POP through optical fiber lines; similarly a NKN POP with an additional node is required to be made available at the Teleport / Earth Station end and all this is needs to be done within the time line available in the project. The committee therefore recommends that the JS [TEL], MHRD may approach BSNL or NKN, at the earliest for accomplishment of the job, since the job of establishment of optical fiber link at universities and colleges in India has been undertaken by BSNL/MTNL/NKN.
- e) The Committee felt looking into the investment the DTH requires at each of the TE, in terms of supply of equipment, modification of rooms provided by an institution and converting it into a studio and control rooms and supply of human resource etc; responsibility of the institute where such TE's are established is to provide academics & subject matter experts to run DTH programme successfully without a break; all this has to happen at all the 150 locations in the country, regularly; the committee therefore felt that there should be a standard Memorandum of Understanding (MOU) drafted and signed by the Heads of the institutes of each TE and the Joint Secretary [TEL] and Mission director, NMEICT and Chairman DTH Committee.
- f) An issue before the committee was, who will get, the civil modifications, electrical, acoustical, air-conditioning, earthing and other jobs at 153 locations, accomplished after the selection of TE. It was kept in mind that the space to be provided by an Institute is to be converted into a functional studio and control room, with the required modifications, within a period of 45 days and before the TE equipment arrive at the site. For solution of this issue, two choices emerged, before the committee; either get such jobs done by the host institute or get all such work done and at all the 153 locations through the Tenderer. The Committee after detailed deliberations, felt looking into technicality, economy, ease on management and for meeting the deadlines, it is better that such activities are entrusted to the tenderer, who in turn will ensure that the civil, electrical, acoustical, air-conditioning, earthing and other jobs are completed before the equipment to be supplied by him reach the site and as such the vendor has to follow the timeline and the commitment specified in the RFP. Accordingly, the committee besides seeking prices for equipment has also sought unit pricing for all these items in the RFP and based on technical and commercial criteria, a vender shall be selected and asked to provide (i) equipment, (ii) provide civil modifications, electrical, acoustical and other jobs required for

creation of functional studio and control room and (iii) providing human resources for about 10 hrs and 365 day basis for live telecast and e-content development, at each of the 153 TE's and provide contingency support too.

- g) Similarly, the committee faced with another question, how to run the operations, who will supply the operational staff for running the TE activity and look into the maintenance of equipment etc. Again after detailed deliberations and discussion, the committee felt that it is not possible for all host institutes to provide manpower, run the operations etc, therefore looking into the magnitude of the problems of providing about 7 operational personal at each of the 153 location, amounting to 1071 personal, it was thought that we need to tender it. After a debate, it was agreed that this part of tender, for engagement of personal should also form part of the RFP for equipment. Since the two activities are different, the committee allowed formation of Consortium by the Tenderer; however, a lead tenderer shall be responsible for supply of goods and supply of human resource and running the operations, etc., at each of the TE.
- h) The committee recommends that the equipment, to be procured and deployed by IIT M at each of the 153 TE, should become the property of the Institute once the equipment are deployed to such institutes. The Head of the institute shall therefore enter the items supplied to the TE under DTH programme, as fixed assets and shall maintain them as per rules. The Head of the institute shall provide a consolidated certificate to the Co-ordinator, IIT M that the items as per purchase order supplied to a particular TE have been received in working condition and has entered items in the fixed register maintained by the institute on this project. Similarly, the civil, electrical, acoustical, air-condition etc work undertaken as per rates prescribed in the tender and as per approval by the IIT M have been accomplished. This shall help the IIT M to clear the payment to the supplier on both the issues.
- i) Taking all above criteria into consideration, the committee has finalised the RFP that comprises of the following:
- I. Deliverables of Audio Video Production Equipment at 153 Teaching Ends
 - II. Technical Programme Integration at each of the 153 Teaching End
 - III. Deliverables at Teleport End
 - IV. Deliverables at MHRD/Institute End
 - V. Deliverables by Services Management Provider (SMP).
- j) The TEEC Committee while designing the basic equipment package and keeping in mind that the prime focus at each TE is to deliver live lectures for DTH & have live interaction with the students, deliberated and observed that since so much of Non-recurring & Recurring investment is being made in establishment of each of the TE and that the lectures are going to be recorded while being telecast at each TE, the teachers shall be pursued to come prepared with PowerPoint presentation, video clips, animation, graphics, text, FAQ, Quizzes', etc, and with the supply of Template, however, there is hardly anything extra resources & funds required to convert the lecture recorded and the material supplied by the teacher into e-content generation at each TE.
- k) The Committee strongly felt that generation of e-content shall immensely benefit student community, who can watch the material offline, through internet and through video on demand, any time anywhere mode. The generation of e-content with the DTH is going to

be a boon, since e-content generation is likely to happen in very large numbers at each of the TE. The committee has therefore focused on the design of equipment package that includes production of e-content along with equipment for generation & telecast of DTH at each TE. Looking into the benefits that with hardly much of additional investment, student besides watching live telecast on TV sets, through DTH, are also going to watch e-content through internet on PC's Tablets, Smart phones etc, the Chairman, DTH committee had in principle given his consent to the TEEC to include additional equipment in the TE for generation of e-content, subject to approval of the DTH committee.

9. Accordingly, this issue was taken up and as listed at agenda no 6, the DTH, committee therefore unanimously approved the proposal to also include equipment required for generation of e-Contents along with equipment for DTH content generation at each of the DTH Teaching End.
10. The members of the DTH Committee looking into the critical deadline of the project, felt that while placing a purchase order for procurement & delivery of equipment, we need to provide a list of 150 TE's to the Tenderer, so that the rooms provided by the Institutes are converted by the tenderer to a functional studio and control room, by the time the equipment reach at each of the TE. Thereafter the equipment are to be installed, tested and human resources made available for the DTH operations and all such activities are required to be completed within next four to five months. Providing all such items at all the 153 locations, within a fixed timeline, is a mammoth task and requires precise and total coordination and control over each & every activity. Hence all this requires a total support of the DTH Committee and the MHRD on regular basis.
11. It was therefore decided that "Operations and Co-ordination Body (OCB)" comprising of (i) Chairman, DTH Committee, (ii) Joint Secretary [TEL] and (iii) the Convener, DTH Committee may meet Education Secretary, HE & the Chairman Project Approval Board, NMEICT on fortnight basis, review progress on the DTH activities and take appropriate decisions required on it.
12. The OCB may further have meetings or conduct Video Conferencing sessions with the VC's /Heads of the Institutes (as per list Annexure-I), for formation of Core Groups for establishment of 153 Teaching End's and Delivery of Content (Live) for the DTH Transmission. The OCB may accordingly finalise a list of 153 TE's in a fortnight.
13. The TEEC constituted by the IIT M submitted its final recommendations & RFP, finalised during 5th meeting held on 16th July 2013 at IIT D to the Chairman, DTH Committee. The DTH committee approved the RFP (with the comments as recommended by the members during this meeting) and requests the Director IIT M to tender the RFP at the earliest and in accordance with the time line of the tender as available in the RFP. Prof. Sunder was accordingly requested to carry forward necessary actions required on tendering the RFP, by the IIT M.
14. The committee was informed that the 25th PAB meeting, held on Nov., 6, 2012, has approved a Non Recurring Budget of Rs.197.77 Crores and Rec. Budget of Rs.372.73 Crores for DTH programme generation during next 4 years of XIIth Plan, subject to issuance of NOC for uplink the MHRD DTH channels.

15. The committee felt that in order to meet the date of launch of DTH, viz; as January 26, 2014, approval of Budget for the DTH activities at the earliest is a must and the funds to IIT Madras for Tendering TE Equipment are required urgently, since the RFP submitted by the TEEC has been approved by the DTH Committee and IIT M has been asked to go ahead with the tender process.
16. The Committee therefore assured that it shall impress the MHRD to ensure the funds on establishment of TE's are made available to the IIT M at the earliest and at least before the PO on this is awarded by the IIT M to the successful bidder. However the Committee felt looking into the DTH launch deadline, the IIT M should not wait for the transfer of funds to it and should immediately start the process of Tender including publication of the Tender.
17. The committee was informed that MHRD vide its order No.F.16-18/2012-TEL dated 7th May 2012 has awarded M/s TCIL, to find through Tender process, a teleport agency for engaging uplinking 50 DTH Channels of MHRD. Further, a seven member Technical Expert Committee (TEC) has been constituted during 5th DTH meeting, held on 14th February 2012, to prepare Specifications, Scope of work and activity requirements of Tender Documents for selecting a Teleport Agency for DTH. The TEC has held a number of meetings, finalised the RFP for the DTH Teleport Tender that was issued by M/s TCIL. M/s TCIL has tendered it and has received five quotations and the TCIL has scrutinised the tender on technical basis and has cleared only three quotations and has now submitted the results to the MHRD for seeking approval to open commercial bids. The DTH committee deliberated on this issue and recommends that a meeting of the TEC constituted for this purpose (along with the representatives of M/s TCIL), may be convened at the earliest by NMEICT. The TCIL should be asked to submit the criteria's followed by it in short listing the Bidders and the TEC shall review the short listing of the Bidders and should offer its recommendations so that M/s TCIL be asked to open the Commercial Bids received by it and a purchase order is issued by it at the earliest.
18. As per agenda 7, of the meeting, the DTH Committee deliberated and constituted "Pedagogy & Scheduling expert committee", comprising of Prof Vasudha Kamat, VC, SNDT University, Prof Binod Agarwal, Ex VC, Prof. Sankati, IIT Kanpur, Prof Uma Kanjilal, IGNOU, Dr Jayashree Shinde, SNDT, Dr. P. Prakash, VC, Open University, Prof. Ashok Ogra, Director, APEEJAY, and Mr. Pradeep Kaul, Senior Consultant & Co-ordinator, DTH. The Term of Reference of the Committee is to (i) access as to how many numbers of lectures are required to plan, conduct & complete UG, PG & short Courses in Engineering & Non-engineering Subjects, (ii) design methodology for transmission scheduling for 50 channels, (iii) provide pedagogy of live teaching of curriculum courses on DTH platform, (iv) provide Methodology of setting Interaction, (v) provide methodology of repetition of telecast of a subject already telecast, (vi) provide Methodology in providing material for Electronic Programme Guide (EPG) & short synopsis by TE's, (vii) Conduct workshops following clustering of a number of TE's, for subject matter experts on methodology to deliver live lectures for DTH & development of e-content. The Pedagogy Committee should discuss & formulate all that is required for the DTH pedagogy. The committee shall submit its recommendations in 4 weeks to the DTH Committee.
19. It was decided, once the TE's are selected, the Selection of Subjects by Core Groups are required to be finalised, further the Subject Co-ordinators needs to be chosen and inducted by the Core Groups and there after Workshops involving Sub Coordinators may be held to

write the Syllabus for the subject chosen. We also need to conduct workshops for Academic Experts and for this TE locations may be clustered.

20. The DTH Committee deliberated and constituted “e-content expert committee” comprising of Dr. Jagdish Arora, Director, INFLIBNET, Prof. Uma Kanjilal, IGNOU, Prof. Bala Subramanya, Mysore University, Dr. Shahid Rasool, EMMRC Srinagar and Mr. Pradeep Kaul with the following Terms of Reference (i) design Template(s) for e-Content Development, (ii) define how to re-package the recorded lecture and material provided by the teacher in production of e-content, (iii) selection of tools for e-Content Development, LMS, Repository development & Content Management (iv) define the process of e-content development, to be used at TE’s, (v) what are the elements required to be sought from the teacher for e-content development, (vi) how to authenticate the content developed and (vi) write the process of development of e-content & prepare a Work Book for this. The committee shall submit its recommendations to the DTH Committee in four weeks.
21. Once the Template, tools for development of e-content and process is finalised, we may request Prof. Uma Kanjilal to design a DTH website and Dr. Jagdish Arora, and Prof. Uma Kanjilal, to produce a “Model e-content” that may be uploaded on the DTH website to assist TE’s in creation of e-content. Further the committee constituted for e-content should hold workshops at clustered TE’s on creation of e-content out of DTH deliveries.
22. The committee noted that it is essential to have a logo to be inserted in transmission at all TE locations. The committee further observed that MHRD has awarded a project titled ‘Creating Digital learning Environment for design in India (e- Kalpa)’ to IIT Bombay, NID & IIT Guwahati under NMEICT Programme. The committee requests JS, [TE] to request the PI’s of the project to design a number of Logo’s for the DTH Channels. The designed logos may be submitted to the DTH Committee for final selection of a logo.
23. The DTH Committee deliberated on the subject and constituted “Set top Box expert committee”, comprising of Prof Mangala Sunder, IIT M, Prof Bala Subramanya, University of Mysore, Mr. Ravi Saksena, Ex Scientist/ Engr. ISRO, Mr. Rakesh Sharma, IGNOU, Mr. J.M. Kharche, Director Engr., Prasar Bharti, Mr. A.K. Jha, Dy. Director Engr., Prasar Bharti, Prof. Kavi Arya, IIT Bombay, Mr. Pradeep Varma, Senior Consultant, NMEICT and Mr. Pradeep Kaul, Senior Consultant & Co-ordinator, DTH. The term of reference of the committee is to come up with a STB design suitable for MHRD DTH programme, methodology to produce/procure, market/distribution & after sale service etc., for the STB’s. The committee shall submit its recommendations to the DTH Committee in four weeks.
24. The committee felt that we need to advertise the launch of DTH channels, so that student know about it and in turn prepare for viewing of the Channels. For this, it was thought proper to constitute a Committee on “Advertisement, promo & Awareness” comprising of Prof. Ashok Ogra, Director, APEEJAY & Ex Vice President, Discovery, Prof. Uma Kanjilal, IGNOU, Mr. Pradeep Varma, Senior Consultant, NMEICT and Mr. Pradeep Kaul, Senior Consultant & Co-ordinator, DTH to look into complete advertising campaign of DTH, through TV, Radio, News papers & Social Media Networks. The committee may further assign job(s) to an advertising Company(s), through DAVP or otherwise, for production of (i) Advertisement film(s) of 10-20 second duration (ii) Radio jingle and (iii) Advertisements etc., which may latter appear on Television, Radio Channels, News Papers all over the country and on social media outlets, from December 2013 onwards. Further, the committee may

organise Competition(s) on (i) slogan writing and (ii) posters design, on DTH, and the best entry may be paid a reward of Rs.1 Lakh for each category. Student and faculty members of universities and college in India may be invited to participate in the slogan & poster competition. The Committee may short list entries on Slogans & Posters and the final selection on this be done by the DTH Committee. The selected poster may then be got printed thro DAVP in sufficient numbers. The posters should then be supplied to all universities with multiple copies and with a request to display it at prominent places in different departments in the university and to further supply the posters to constituent Colleges, with a request to display it in all departments of colleges, for wide publicity.

25. The Committee felt that it is important to monitor ourselves the transmission of 50 DTH channels, whether it is properly taking place or not. Therefore the committee conveyed its approval, to Setup a Monitoring station at a temporary office of DTH & NMEICT Mission Secretariat, likely to come up at JNU, for monitoring 50 MHRD DTH Channels (including redundancy receptions) to form a part of RFP of TE's tender.
26. It was felt in order to enable viewing of (i) DTH content on IP devices on multicasting mode and (ii) large quantity of e-content, likely to be produced out of the DTH project, on IP devices using CDN and till the time the CDN and cloud Computing is set up under NMEICT programme, we may engage BSNL/MTNL to carry out CDN on its network. This will immensely benefit students thought the country. The JS [TEL], MHRD is requested to kindly take necessary steps on this.
27. Chairman, DTH Committee advised that the vender who is to be awarded the tender, should create a website, in which, any of the TE having a problem on Para i) items I), II) & V) above can upload their complaints at the website and the complaints are attended by the vendor and its status by the vendor is again displayed on the website.
28. The Committee noted the development taking place on construction of a building at JNU for setting up & migration of MHRD DTH Earth Station and NMEICT Mission Secretariat. The PAB in its meeting held on 4TH October 2012, has approved Rs.19.5 Crores for the above construction at JNU and the JNU has now forwarded an MOU to the MHRD for approval and signature. The project if cleared in September 2013 is likely to be handed over in 18 to 24 months, i.e., JNU may hand over the building to MHRD around September 2015.
29. The Committee discussed the future plans on DTH and looking into the Mission document, felt that although the mission document has mentioned to launch 1000 DTH channels, however, with the experience that the committee had, the committee felt that it is sufficient that we next move from 50 to only 250 channels from 2014 onwards. The committee therefore approved scaling of the MHRD DTH channels from 50 channels Pilot programme to 250 Channels as main programme by January 2016.
30. The Committee further felt in order to reduce multiple interruptions on MHRD DTH services to be experienced by the viewers, the up-scaling of channels from 50 to 250 and the migration of Earth station from the hired one to our own building at JNU should be synchronised carefully. According, for setting up of 250 channels we may require 10 transponders on a single Satellite and the committee felt that necessary steps may be initiated in this direction.

31. The Committee noted that from earlier communication with the DOS, the DOS requires minimum notice of 2 years for fabricating a Satellite. It was therefore felt that we should carefully time the receiving of new building at JNU, the setting up of Earth Station in this building, and migration from 50 to 250 channels. Based on the present assumptions, the Secretary, HE, MHRD should now write to the Secretary, DOS for making 10 transponders available for the MHRD DTH programme and the delivery of it in January 2016.
32. The Committee noticed that the DTH programme has entered into a crucial stage of operation and is of such a large magnitude; it does not have a Project Investigator and backing of an institute, to who funds could be made available. Further the activity is at present run by a single person at NMEICT. In view of this, it was felt, there is a strong need to strengthen the DTH Mission Secretariat. The Committee felt till the time, the DTH Mission Secretariat is created & becomes operational; we should make some interim arrangements. The Committee therefore felt that since setting up of Teaching End programme of the DTH, is assigned to IIT Madras by the PAB, the Director, IIT Madras, may further be requested by the JS [TEL] & Mission Director, NMEICT, as an interim arrangement and engage about four to five personal in the office of NMEICT for exclusive use of DTH Programme and the recruited personal should report to Mr. Pradeep Kaul, Convener, DTH and Senior Consultant, NMEICT.
33. The committee went through the background note circulated titled "Role, Definition and Scope of different Agencies in the implementation of MHRD DTH Programme". The members deliberated on roles & functions of different agencies in the DTH programme such as (i) DTH Committee / MHRD, (ii) IIT Madras (for preparing RFP & Tendering TE package), (iii) the Teaching End Provider i.e., the Host Institute for running the operational activities at each of the TE. The committee approved the document as per Annexure-II.
34. The Committee felt it is important to record the application of mind that has gone in creating the DTH system; that, (i) the responsibility of generation of content, its quality, correctness etc lie with the Institutions, where the TE is located and where the content gets generated. Since the DTH Committee or the MHRD is not going to deal with the content creation, our job is just to establish the hardware, provide funds, overall guidance and facilitate establishment of MHRD DTH system in India, (ii) The equipment selected for the TE is expected to have an operational life of 5-7 years and at the end of it, the MHRD shall have to provide replacement.
35. It was suggested that IIT M may prepare a virtual walk through and 3 D model of DTH TE, to demonstrate the methodology chosen in design & working of it. This will help people associated with the project to understand different concepts of the project.

The meeting ended with vote of thanks to the Chair.

Pradeep Kaul
Convener, DTH Committee &
Senior Consultant (Tech.) NME-ICT

Basis for Selecting 'Teaching Ends (TE)'

The Mission Document, NME-ICT approved by the Cabinet on January 2, 2009, states "to provide 1000 DTH (Direct to Home) channels on 24X7 basis for every subject for every class in various languages to the extent possible.

This would reduce waiting time for watching the next lecture on that subject / topic or for repeat telecast based on demand. These channels would also help reduce load on the intranet VPN through reduction in the number of repetitive downloads of the same video content by various students".

In order to decide as to how many channels, out of the 50 MHRD DTH channels, should tentatively be proportionate to a Stream, it has been thought proper that channel allocation should be based on the percentage of students, presently taking that particular Stream/discipline, in India. The information/statistics on this has been collaborated from 'All India Survey on Higher Education, 2010-11' recently conducted by MHRD and is as under:

Student enrolled in HE numbering 2,74,99,749* are going to benefit from DTH broadcast, that includes (i) students studying through formal class room teaching from Colleges, Universities, Institutes etc., and (ii) students studying through Distance Learning mode from universities in India. The students studying through Distance Learning mode (at present amount to 12.1%*) are going to benefit more from the DTH telecast, since they get very little chance, to be taught face to face, by subject matter experts.

For better utilisation of e-Content generated and disseminated (including DTH) under NME-ICT programme, the recognised Universities and Institutes are advised to devise mechanism to award Credit points to registered students, taking Courses through DTH, that may also include student interacting regularly with SME/Teacher, submitting assignments & tutorials, taking practical's (wherever applicable) and clearing the prescribed examination.

Student Enrolment by Levels in Indian Universities/Institutions*

| | |
|-------------|--------|
| UG | 79.9% |
| PG | 11.89% |
| Diploma | 6.59% |
| Certificate | 0.52% |
| PG Dip | 0.51% |

Stream Wise Enrolment in UG

| S.No | Stream (% enrolment in the country)* | No of TE's | Tentative No of Channels assigned to the stream |
|------|--|------------|---|
| 1 | Arts/Humanities/Social Sciences courses, 47% | 69 | 23 |
| 2 | Engineering and Technology, 16% | 24 | 8 |
| 3 | Commerce, 13% | 21 | 7 |
| 4 | Science ,11% | 18 | 6 |
| 5 | Comp Sc/Comp Apln., 3% | 6 | 2 |
| 6 | Medical Science, 3% | 6 | 2 |
| 7 | Management, 2% | 3 | 1 |
| 8 | Law, 1% | 2 | 1 |
| 9 | Agriculture & Allied, 1% | 1 | |
| 10 | Others 3% | -- | |
| | Total | 150 | 50 |

*Based on 'All India Survey on Higher Education, 2010-11' recently conducted by MHRD

CRITERIA FOR SELECTING A TEACHING END

Minimum of three Teaching Ends (TE's) are required to be set up for running a channel. Accordingly 150 TE are required for 50 Channels.

For selection of TE's, it is important to include Institutions/Centres where such activity already exists.

The TE should be selected to cover all streams and disciplines of academics in HE, as stated in Mission Document.

Besides choosing TE's from centrally funded Institutions, the State Institutions and Institutions of National importance should also be selected.

Care should be taken to involve institutions that are well established (newer institutions to be avoided), have good academics & other infrastructure.

TE's to have presence in all important cities and regions.

Based on above criteria, 12 Core Groups as under are chosen.

Group-A is Consortium for Educational Communication (CEC) (an Autonomous Organisation created under UGC, to cater for development & dissemination of Education content through ICT). The CEC has 23 Centres associated with it (called EMMRC's and placed at 23 Universities across India) and some engaged in development of educational Video programmes (since 29 years) and the programmes have been broadcast through Doordarshan (Country Wide Classroom programme). It also runs a TV channel on Gyan Darshan & DD Plus (DTH channel) called Vyas channel & EduSat interactive Channel. The Centres out of about 700 sanctioned posts have 500 trained staff engaged only in the development of educational Video programmes, have broadcast quality Audio Video equipments and have so far produced more than 26,000 TV and e-content based programmes. The CEC Media Centres are at present, engaged in development of e-content in 87 UG subjects, awarded by the NMEICT. Out of 23 Centres 17 Centres and CEC, (15-29 years in existence) are recommended for establishment of 18 TE's.

Group-B is IGNOU, engaged in Distance Education and has been developing video audio educational material since about 20 years and running 2 channels on KU band, called Gyandarshan. The IGNOU does not have A-V centers associated to it. However it is recommended to involve IGNOU and some of the 13 State Open Universities for establishment of 8 TE's.

Group-C comprises of NIT institutions, which have potential to contribute for technical courses and have so far not been involved in the development of NPTEL programme. It is recommended that out of 30 NIT Centres we may involve 20 old NIT's for establishment of 20 TE's.

Group-D has IIT's; the 7 old IIT's have since 2003 been involved in the production of National Programme on Technology Enabled Learning (NPTEL) e-learning video & web based lectures and during Phase-I have produced 136 Video and 125 Web Engineering Courses and since 2008 Phase-II another 647 Video and 581 Web courses are being made. Out of 16 IIT's it is recommended to establish 14 TE's at 7 old IIT's.

Group-E is group of Indian Institute of Managements (IIM's) numbering 13; the group has high potential to contribute to DTH programme, but has so far not shown much interest in entering into development of e-content under NMEICT and DTH broadcast. The TE to be established at IIM can only be decided after having a dialogue with them.

Group-F is Core Group of Central Universities and numbering 41. Here it is observed that 17 CU have been established from 2009 onwards, 6 between the year 2000 and 2009 and 18 CU's are established pre 2000. Accordingly it is recommended to only establish 23 TE's out of 18 CU's (pre 2000) and 6 TE's out of 6 CU's (2000-2009). Thus total 29 TE's at 24 CU's.

Group-G has selected group of 'Institutions of National Importance' and it is recommended to establish 12 TE's out of 17 such institutions.

Group-H has list of 'State & other Universities' and it is recommended to establish 20 TE's out of 42 of such institutions.

Group-H has 'Selected Institutions' and it is recommended to establish 9 TE's out of 19 such institutions.

Group-I carries list of NITTER Institutes numbering 4. The institutions have so far not been involved in NPTEL programme and have lot of potential to get involved in DTH content delivery; accordingly it is recommended to establish 8 TE from 4 NITTER Institutes.

Group-K has a list of 'Agriculture Universities' numbering 51 and it is recommended to establish 9 TE's out of these institutions.

Group-L has a list of 'Medical Institutes' and it is recommended to establish 10 TE's out of these institutions.

A total of 160 TE's are recommended to be established at 134 institutes out of 268 institutions as per Group-A to Group-L as under.

“Selection of Teaching Ends”

| S.N | Core Group Institutions | Total Institutions (in Core Group & best choice) | Tentative TE's to be set up | Scheduled Meeting Date |
|------------|---|---|------------------------------------|-------------------------------|
| A | B | C | D | E |
| 1 | CEC & Media Centres, (Group-A) | 18/ 23 | 18 | January 18, 2013 |
| 2 | IGNOU + State Open Universities (Group-B) | 1+13= 14 8/14 | 8 | January 22, 2013 |
| 3. | NITs, (Group-C) | 20/ 30 | 20 | March 22, 2013 |
| 4. | IITs, (Group-D) | 7/ 16 | 14 | |
| 5 | IIMs, (Group-E) | 13 | | |
| 6. | Central Universities (Group-F) | 18 (<03) 18 + 6 (03-09) 6 + 17 (>2009) - | 23 6 | |
| 7. | Institutions of National Importance (Group-G) | 12/17 | 12 | |
| 8. | State & other Universities (Group-H) | 20/ 42 | 20 | |
| 9. | Selected Institutions (Group-I) | 12/19 | 12 | |
| 10 | NITTTR, (Group-J) | 4/ 4 | 8 | |
| 11 | Agricultural Universities, (Group-K) | 9/51 | 9 | |
| 12 | Medical Institutions, (Group-L) | | 10 | |
| | | | | |
| | Grand Total (1-12) | 268 | 160 | |
| | Total Number of Channels | | 50 | |
| | | | | |

The role, definition and scope of different Agencies involved in implementation of MHRD iDTH Programme:**(A). DTH Committee / MHRD**

Scope:

1. The DTH Committee of NMEICT, MHRD shall be Empowered Committee of Experts, to provide vision, mission and directions in making Satellite based Higher Education available to masses of India including through the DTH network and shall be responsible for design; implementation; operation, monitoring of Satellite based content generation, delivery and its reception at Institutions.
2. Seek Satellite Transponder for the DTH and necessary NOC require for seeking WPC/NOCC/SACFA clearances from Wireless Planning and Coordination from Ministry of Communications & IT.
3. Interact with VC's /Heads of the Institutes in formation of Core Groups for establishment of Teaching End's and Delivery of Content (Live) for the DTH Transmission, select and make available a List of 153 TE's.
4. Prepare & approve a standard Memorandum of Understanding (MOU) for establishing, running & live Content Generation for MHRD DTH programme. The tripartite MOU to be by signing by (i) Heads of the institutes of each TE, (ii) Secretary, HE, MHRD & Chairman PAB, NMEICT and (iii) Chairman DTH Committee for establishing and running up of TE's.
5. Planning, designing and approve modifying the existing rooms as a Media Studio (Teaching End) and IT enabled classrooms/conference rooms in various locations.
6. Approve conceptualization of system design, functional concept and workflow for running the DTH system recommended by the Teaching End Expert Committee (TEEC) constituted by IIT Madras.
7. Approve technical & Software specifications regarding state of the art equipment for Teaching End, broadcast audio, video studios and related IT, with facilities, recommended by the TEEC, such as:
 - Studio equipment
 - Editing System
 - Graphics systems
 - Media server
8. Constitute Technical Expert Committee (TEC) for preparation of RFP for selecting a Teleport Agency; approve the RFP, engage and approve an agency to float the Tender for the Teleport Selection, approve the recommendations of the tenderer agency and award of the Contract to the successful bidder on this.
9. Authorise payments to be paid to the Selected Teleport Agency for the services provided by it.
10. Locate a place to set up our own Teleport station, select the place and enter into an agreement with the agency to lease the place and further construct DTH Secretarial & Technical place.
11. Constitute Expert Committees to recommend the tasks assigned to it and to approve recommendations of such committees. Further to grant administrative approve for conduct of such committees/ meetings including committees / meetings where Convener, DTH is involved.
12. Provide requisite Non-Recurring and recurring funding for the project and to IIT Madras and Host Institutions.
13. Re-appropriate Recurring & Non-Recurring budget heads within the sanctioned budget by the PAB/MHRD towards DTH Programme.
14. Provide guidance and necessary approval for establishment of Special Purpose Vehicle a permanent Body for operationalisation of DTH system after its inauguration.
15. Approve contract formats for engagement of Subject Co-ordinator & SME's required for creation of Content at TE's and approves general rates to be paid to such personal. Remuneration received by any expert under the project shall be in accordance with instructions on this in Mission

Document, NMEICT and would be in addition to his/her salary, from his/her organization. The expert's contribution to successful completion of the project would be duly acknowledged.

- 16.** Resolve issues if any, between any agency, arising out during implementation and operations of DTH programme.
- 17.** To involve itself into any of the activities that is necessary for establishment of functional, operational and successful DTH system.

(B). IIT Madras – System Provider & Operations.

Scope:

IIT Madras has been identified as “Anchor Institutions” for Establishing and running of Teaching Ends for generation of educational content for running 50 DTH channels & development of e-content out of deliverables sought from Subject Matter Experts (SME) and to achieving the entrusted goals within the agreed timeframe assigned by the DTH committee.

1. Follow instructions issued by the DTH Committee or JS [TEL], MHRD on conduct of iDTH programme.
2. Set up Teaching End Expert Committee (TEEC) to prepare RFP for establishment & running of TE's.
3. Finalise RFP & list of equipment for DTH, Teaching End (TE).
4. Decide number of TE required for running of 50 DTH Channels.
5. Receive funds from MHRD for establishment of TE's.
6. Tender & negotiate for bulk purchase of TE Equipment on behalf of all TEs.
7. Ensure deployment of TE equipment in a time bound manner.
8. Prepare Tender - Bid documents in line with Govt. of India purchase norms and procedures.
9. Evaluate Tender Responses - Bid Process Management and Selection Technical Program Management Partners / Managed Service Providers / Vendors.
10. Award Tender - Finalize the requirements and procure all the items and services as per the procurement procedures of MHRD/ Govt. of India.
11. Provide (i) instructions regarding establishment of a standard TE & Control room and (ii) rates quoted by the successful Tenderer to the Head of the Institute where TE is established for providing Civil, Electrical, Modification, Acoustic Treatment, Air conditioners, Fire detector, alarm, extinguishers etc jobs
12. Make necessary payment(s) to the successful Tenderer for providing Civil, Electrical, Modification, Acoustic Treatment, Air conditioners, Fire detector, alarm, extinguishers etc jobs implemented by the Technical Programme Integrator at each of the TE and as per the approval of the Head of the Institute where such TE(s) is/are established and as per the rates quoted by the successful Tenderer. Such payments to be made only to the Tenderer by the IIT M or receipt of a certified issued by the Head of the Institute where the TE is established that the work awarded by it to the Tenderer at the TE has been successful completed.
13. Make Payments - To the selected vendors for supply of equipment, Technical Programme Integrator and Service Management Provider at each TE and after successful receipt & services as per specified terms and conditions provided in the successful tender.
14. Make monthly payment to the Service Management Provider, by 10th of every month for providing operational services at each of the TE, based on the Certification of Services for the month provided by Co-ordinator TE by 3rd of every month.
15. Transfer Equipment & assets created on a TE to its respective Host Institutes where such Teaching Ends are created and ensure it is entered in the Asset Register of the Host Institute.
16. Enter into a contract with SMP for renewal of contract as per terms & conditions.

(C). Teaching End Provider (Host Institute)

Scope:

- 1 To follow instructions issued by the DTH Committee or IIT M regarding, setting up, content generation and operations of iDTH programme undertaken.
- 2 To provide requisite space as per recommendations of DTH Committee, electricity, power backup, water, telecom and other infrastructure / facilities required for establishment of TE (s) and its smooth running.
- 3 The Lead Core Group Institute on behalf of TE established under the group shall receive funds from MHRD for making payment for engagement of Subject Co-ordinator & SME's at each of the TE required for creation of Content and make such payments as approved by the DTH committee.
- 4 Provide two TE Co-ordinators to be in-charge for smooth running of Academic, Technical and Operations of the DTH programme at the TE.
- 5 Create a website to log on activities on Academic, Technical and Operations of the DTH programme at the TE; regularly update the content on it. Further the TE should upload on the website issues relating to Deliverables of Audio Video Production Equipment, Technical Programme Integration and Deliverables by Services Management Provider (SMP) at each of the TE. The faults and issues are to be attended by the Tenderer and its status be displayed on the website.
- 6 Get rooms, provided functional as Teaching End and get the Civil, Electrical, Modification, Acoustic Treatment, Air conditioners, Fire detector, alarm, extinguishers etc jobs implemented in 45 days by the Technical Programme Integrator in accordance with the standard requirements provided by the DTH committee/IIT M. The Head of the Institute where such TE is established shall approve the jobs as per the rates quoted by the successful Tenderer. After successful completion of the jobs, the Head of the Institute where the TE is established shall issue a Certificate to the Tenderer and the Coordinator IIT Madras that the work has been completed as per rates offered in the Tender and as per Design approved by it, so that the payment on this is issued by the IIT to the Tenderer.
- 7 Implement or get implemented Optical Fiber connectivity from POP (NKN) to TE, for required traffic on OF/NKN and redundancy provision for QoS as per recommendations issued on this by the DTH Committee or IIT M.
- 8 Allow 'Technical Programme Integrator' appointed by the DTH Committee/IIT M to integrate the TE Equipment to be installed at your Teaching End.
- 9 Receive Equipment acquired by IIT Madras; confirm receipt of the equipment in accordance with the purchase order; enter the received equipment to an Asset Register of the Institute; submit a certificate to IIT M declaring the equipment ordered by the IIT M for the Centre has been received as per order and are in working condition; verify annually the physical presence & working condition of the equipment in the Asset Register.
- 10 Allow 'Services Management Provider (SMP)' appointed by the DTH Committee to engage TE Contractual staff and have total co-ordination with the SMP for smooth operations and running activities at the TE.
- 11 Follow instructions issued by the Lead Core Group regarding which subject is to be delivered by the TE, work in advance for necessary preparation on it.
- 12 Ensure live Contents in a number of subjects are delivered on DTH as per Academic programme.
- 13 Conduct workshops for Subject Experts and SME's or allow them to participate in National or Regional workshops announced by the DTH Committee or IIT M and make necessary TA/DA payments to such participants.
- 14 Engage Subject Co-ordinator for each of the Subject assigned to the Centre for preparation of National Syllabus, provide & Co-ordinate SMEs for successful delivery of the subject and supervise e-content development on the subject and enter into contract and make payment to him/her as per contract format approved by the DTH committee after successful completion of work.

- 15 Make payments to the Subject Co-ordinator after successful transmission of each quarter of the subject assigned to him/her.
- 16 Engage SME's required for creation of Content & submit Soft copies of lecture plan, collection of graphics, pictures, animations scheme, question answers, 15 Quiz / test, web-links, etc., and enter into contract and make payment to him/her as per contract format approved by the DTH committee after successful completion of work.
- 17 Make 75% of the Honorarium payment due to the SME's after successful transmission and submission of required material. The remaining due payment to SME be paid after approval by SME the e-content developed by the TE out of his/her lecture delivery and material provided.
- 18 Monitor the telecast for complete duration of the subject assigned to the Teaching End by the Lead Institute/ IIT M/MHRD DTH Committee and send by 2nd of every month the Telecast report on this to concerned Agency as instructed, indicating transmission quality during the month.
- 19 Provide by 2nd of every month a statement regarding satisfactory or shortcomings in the operational services at each of the TE provided by the Service Management Provider, in order to enable monthly payments to the Service Management Provider by the IIT M, by 10th of every month.
- 20 Ensure the SMP is providing services successfully as per Quality of Service Contract. Authenticate the payment claim form submitted by the SMP, is as per contract, within 3 days of the submission of payment claim form to the Coordinator IIT Madras, including whether the services involve any penalty for the month. The authentication certificate on Institute letterhead duly signed by the TE Co-ordinator of the Institute shall be mailed to the Coordinator IIT Madras within the stipulated time.
- 21 Separate account will be kept of the DTH activity in accordance with sanctioned grant received on this.
- 22 The accounts of equipment etc. related to the DTH programme for which assistance is received under this scheme will be made available for inspection by an officer authorized by the Ministry / State Level Monitoring Agency (SLMA). The accounts relating to the project shall be open to check also by the Comptroller and Auditor General of India or his nominees at his discretion.
- 23 The institution / organization shall prepare and maintain a record of all assets acquired wholly or substantially out of grants received under the scheme. Such assets shall not be disposed of, encumbered or utilized for other purpose without prior sanction of the Ministry.