

## **MINISTRY OF HUMAN RESOURCE DEVELOPEMENT**

### **Committee on DTH**

The Ministry of HRD vide order No. F.16-49/2010-DL dated 24<sup>th</sup> December, 2010 constituted a Committee on Direct to Home (DTH) under NMEICT Project. The first meeting on DTH was held on 10<sup>th</sup> June, 2011 at Room No. 324 A, Vigyan Bhawan Annexe, New Delhi. The following members attended the meeting:

1. Prof. S.V. Raghavan, Chairman, DTH Committee, Scientific Secretary, Office of the Principal Scientific Adviser to the Government of India.
2. Mr. N.K. Sinha, Mission Director, NMEICT, Additional Secretary (TEL), MHRD, New Delhi.
3. Dr. A Bhaskaranarayana, Ex. Scientific Secretary and Director, SCP/FMD, ISRO.
4. Mr. K. Sethuraman, Assistant Director, SATCOM Application, Sat. Communication Programmes Office, ISRO, Antariksh Bhawan, New BEL Road, Bangalore -560231.
5. Shri Ravi Kant, In-Charge Director, EMPC, IGNOU, Maidan Garhi, New Delhi – 110068.
6. Prof. Y.N. Singh, Dept of Electrical Eng., IIT, Kanpur, 208016
7. Dr. P. Ramanujan, Director, C-DAC, Bangalore, 560038
8. Shri Pradeep Kaul, Convener, DTH Committee, Ex. Joint Director, CEC, New Delhi.

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

At the outset, Prof. Raghavan welcomed the members and informed that the NMEICT Mission has so far gone ahead with content generation and lot of content has been created, as on date. The IITs are now developing NPTEL Phase II. Further, there are a number of institutions of Higher Learning including Scientific Labs, Colleges and Schools who can contribute for the content; such institutions may also be involved in development of content. We may also keep in mind the requirements of Right to Education Bill and the inclusive growth requirements. For creating the DTH set up, we should also keep in mind the institution mechanisms and rapid shift in pedagogy

wherein earlier the students used to seeing teachers and now the TV will appear before them.

Mr. N.K. Sinha briefed the members about the salient features of the Mission. He informed, soon 1200 Semester Engineering courses will be made available by the IITs. Besides this, the CEC is going to complete about 80 undergraduate subjects and UGC is likely to take production of another 80 PG subjects. All this will make the rich content available for the launch of DTH channels.

At present all we need, is a set up or a network, to make the content reach the students at their **homes**, besides reaching the content at the institutions. For this, the optical fiber is going to take a lot of time to reach the homes. Therefore, reaching through **space** is the only segment through which we can reach the masses quickly. In this regard he requested the Department of Space to provide a couple of transponders to start about 50 educational channels, which will gradually grow to 1000 channels. We shall also have the regional channels in DTH setup. He informed that the Government of India has further decided that Schools should also have similar ICT missions and the School education may also be looked after by the NMEICT.

Mr. Sinha felt that there is commercial limitation with the private DTH Operators and their services may not be available to us, similarly the Doordarshan is at present saturated and has its own plans, therefore we need to have our own DTH setup. He, therefore, requested the Department of Space/ISRO to take up the lead in this and **look into the total needs of the DTH requirements of MHRD**. We further need to look into the cost segment of the receiving equipment. How to reduce the set top box cost from the present Rs. 3000/- to a reasonable level. We should also see that the DTH is also **enabled** with the Low Cost Computing Devices likely to be made available by the MHRD to the students at reasonable cost.

Dr. Bhaskarnarayanan gave a impressive presentation out of his long experience in the field. He recommended that we may pack up 25-30 channels in 36 MHz Transponder and the MHRD may at present ask for two such transponders from Deptt of space. The transponders are likely to be made available at a **cost of Rs. 4-5 crores** per transponder/year. For better efficiency we should choose MPEG-4 (AVC) for compression and DVB-S2 for transmission. At present the set top cost about Rs. 3500/- including the dish antenna and further a TV set may cost Rs 5000/-. He suggested that we may not require Conditional Access, in Set Top Boxes and recommended that we may **include a storage capacity of 40 hours** in terms of HDD or pen drive, in the set top boxes, which will help the student to record the education programmes of their choice, for later viewing.

Dr. Narayan briefed the members that we should also look into the rain attenuation which is associated with DTH reception. For this issue he may recommend **0.9 Mtr Diameter antenna** size at places where **significant rain is experienced** and remaining places of India **0.6 Mtr diameter** antenna will be sufficient. He further briefed

that at present we may carry on with Ku X Ku transmission and in future may go for Ka X Ku transmission. He also envisaged that we may include solar panel and UPS System at places where power supply is a serious problem. Issues concerning theft of outdoor equipments, monkey menace in disturbing the outdoor antenna and other related issues were already discussed.

The issue of seeking clearances from I&B Ministry were also raised by him. He also informed that as per present policy, State Governments are not authorised to transmit. It was decided the wireless coordination for seeking WPC permission to uplink 50 DTH Channels by MHRD may sought from concerned agencies. It was decided that Mr. Pradeep Kaul and Mr. Ravi Kant may look into such aspects.

Dr. Narayanan also briefed the Committee that there is a need to **produce programmes using good quality recording**, editing and storing devices, while producing the educational programmes under NME-ICT programme. Efforts should therefore be made to produce quality programmes by the concerned agencies and it was felt that the educational program production & storage may be made with proper equipments and with a bit rate of about 35 Mbps under MHRD.

Mr. Sethuraman gave a PowerPoint presentation on a plan to set up DTH system in India. He also enlightened the members with the experience ISRO has gained while launching the EDUSAT Mission. He informed that right now **ISRO is facing bandwidth crunch** and spare transponders are not available with the ISRO. Therefore for launch of 50 educational channels of MHRD DTH project, it is recommended we **may lease two transponders** for immediate use. He informed that the MHRD requirement shall be put before the next meeting of INSAT Co-ordination Committee of ISRO. However, the leasing of the transponders by ISRO may take 2-3 months for which RMP has to be floated immediately. On the requirement of 1000 channels by MHRD, the ISRO has to **build a separate and dedicated satellite** containing about 30 transponders, which will take about 2 years to produce and launch.

It is recommended that a **common hub with SCPC** may be used from where transmission from all the sources collected together will be uplinked. With the help of Block Diagram he explained that appropriate **Teaching Ends** are to be setup by MHRD. He recommended the leasing of the transponders may be sought from INTELSAT or NSS Satellite operators. He informed that a single and a simple Earth station may cost between 4-5 Crores, otherwise, the uplinking equipment may cost upto 15 Crores.

The other members also deliberated and gave their valuable suggestions. It was proposed that the next meeting will be held in the 1st week of July at ISRO headquarters, Bangalore.

**ACTION ITEMS:**

1. Concerned clearances to uplink 50 DTH Channels by MHRD from I&B Ministry may be followed up by Mr. Pradeep Kaul and Mr. Ravi Kant and taken up by Mr. Sinha.  
(Action: Mr. NK Sinha)
2. For launch of 50 educational channels, ISRO to initiate procedures to lease two transponders for immediate use by the MHRD.  
(Action: Mr. K. Sehuraman)
3. For uplink of DTH signals (a) required Teaching Ends and (b) an Earth Station may be setup by the MHRD at an appropriate places and the required equipment for this may be ordered.  
(Action: Mr. NK Sinha)
4. On the requirement of launch of 1000 channels, the ISRO to initiate procedures to build a separate and dedicated satellite for the MHRD, containing about 30 transponders.  
(Action: Mr. K. Sehuraman)
5. Next meeting to be held in the 1s week of July at Bangalore.  
(Action: Mr. K. Sehuraman & Mr. Kaul)

The meeting ended with vote of thanks to the Chair.

***(Pradeep Kaul, Convener, DTH Committee)***

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