

**MANAGEMENT OF SATELLITE  
CAPACITY FOR DTH SERVICE BY  
DEPARTMENT OF SPACE**

DEPARTMENT OF SPACE

PUBLIC ACCOUNTS COMMITTEE  
(2015-16)

FORTIETH REPORT

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SIXTEENTH LOK SABHA



LOK SABHA SECRETARIAT  
NEW DELHI

# **FORTIETH REPORT**

## **PUBLIC ACCOUNTS COMMITTEE** (2015-16)

(SIXTEENTH LOK SABHA)

### **MANAGEMENT OF SATELLITE CAPACITY FOR DTH SERVICE BY DEPARTMENT OF SPACE**

DEPARTMENT OF SPACE



*Presented to Lok Sabha on:*

*Laid in Rajya Sabha on:*

26 APR 2016

**LOK SABHA SECRETARIAT  
NEW DELHI**

April, 2016 / Vaisakha 1938 (Saka)

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Prof. K.V. Thomas

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**COMPOSITION OF THE PUBLIC ACCOUNTS COMMITTEE**  
**(2014-15)**

Prof. K.V. Thomas

Chairperson

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21. Shri Sukhendu Sekhar Roy
22. Shri Ramchandra Prasad Singh

<sup>\*</sup> Elected w.e.f. 3<sup>rd</sup> December, 2014 *vice* Shri Rajiv Pratap Rudy who has been appointed as Minister w.e.f. 9<sup>th</sup> November, 2014.

<sup>†</sup> Elected w.e.f. 3<sup>rd</sup> December, 2014 *vice* Shri Jayant Sinha who has been appointed as Minister w.e.f. 9<sup>th</sup> November, 2014.

<sup>‡</sup> Elected w.e.f. 3<sup>rd</sup> December, 2014 *vice* Dr. M. Thambidurai who has been chosen as Hon'ble Deputy Speaker, Lok Sabha and has since resigned from the membership of the Committee.

## INTRODUCTION

1. I, the Chairman, Public Accounts Committee, having been authorised by the Committee, do present this Fortieth Report (Sixteenth Lok Sabha) on '**Management of Satellite Capacity for DTH Service by Department of Space**' based on C&AG Report No. 22 of 2014, Department of Space and Ministry of Information and Broadcasting.

2. The Report of Comptroller and Auditor General of India was laid on the Table of the House on 28<sup>th</sup> November, 2014.

3. The Public Accounts Committee (2014-15) took up the subject for detailed examination and report. The Committee took evidence of the representatives of Department of Space and Ministry of Information and Broadcasting on the subject at their sitting held on 10<sup>th</sup> February, 2015. The subject was subsequently carried forward by the successor Committee (2015-16) for examination. The Committee considered and adopted this Draft Report at their sitting held on 1<sup>st</sup> April, 2016. The Minutes of the Sitzings form Appendices to the Report.

4. For facility of reference and convenience, the Observations and Recommendations of the Committee have been printed in thick type and form Part- II of the Report.

5. The Committee thank the predecessor Committee for taking oral evidence of Department of Space and obtaining information on the subject.

6. The Committee would also like to express their thanks to the representatives of Department of Space and Ministry of Information and Broadcasting for tendering evidence before the Committee and furnishing the requisite information to the Committee in connection with the examination of the subject.

7. The Committee place on record their appreciation of the assistance rendered to them in the matter by the office of the Comptroller and Auditor General of India.

NEW DELHI;  
1<sup>st</sup> April, 2016  
12 Vaisakha, 1938 (Saka)

PROF. K. V. THOMAS,  
Chairperson,  
Public Accounts Committee

## REPORT PART-I

### CHAPTER - I

#### INTRODUCTORY

Direct to Home (DTH) service is a satellite based broadcast service which entails distribution of multi-channel television programmes in Ku band. Ministry of Information and Broadcasting (Moi&B) is the nodal Ministry for broadcasting services in India. Department of Space (DoS) provides national space infrastructure through satellite transponder capacity to meet the telecommunication, broadcasting and security requirements of the country. The Union Government in November 2000 approved the proposal of Moi&B to introduce DTH service in India. The Union Cabinet in January 2000 approved the 'open sky' policy and allowed Indian and foreign satellites to be used in DTH services with the condition that proposals envisaging use of Indian satellites would receive preferential treatment.

1.1. A Compliance Audit was conducted during July 2012 to August 2012 and from August 2013 to October 2013, covering the period from March 2004 to July 2013. With a view to evaluate:

- Whether planning and realization of satellite capacity for DTH service was done with a view to give economic, efficient and effective service;
- Whether allocation of satellite capacity for DTH service was transparent, fair and equitable; and
- Whether transponder lease agreements safeguarded the financial interest of Government and were implemented accordingly.

1.2. During audit, records were scrutinized relating to implementation of SATCOM Policy, minutes of various committee meetings, project reports approved by the competent authority, transponder lease agreements, account statements and its ledgers

maintained in DoS, Satellite Communication and Navigational Programme Office (SCNPO) and Antrix.

1.3. Against the above backdrop, the Public Accounts Committee (2015-16) selected the subject as reported in the C&AG's Report-No. 22 of 2014 for detailed examination and report. In the process, the Committee obtained Background Notes and some clarifications from the MoI&B and from the DoS. The Committee took oral evidence of the Secretaries of the MoI&B and DoS and other representatives on 10<sup>th</sup> February, 2015 and obtained information on the subject. Subsequently, the Committee decided to refer the subject to the newly constituted Sub-Committee i.e. Sub-Committee-V dealing with subjects on infrastructural projects other than Railways. Based on the information gathered, the Committee proceed with examination of the relevant issues in detail in the succeeding chapters of this Report.

1.4. The Department of Space (DoS)/Indian Space Research Organisation (ISRO) is mandated to provide satellite transponder capacity to meet the telecommunications and broadcasting requirements of users in the Country belonging to the Government, PSU and Private/Commercial sectors. DoS planned to introduce high power Ku-band satellites for meeting the requirements of Direct-to-Home (DTH) broadcasting applications during the late 90s with the aim of realizing the satellites by middle of the next decade. INSAT-4A and 4B were the first two high power Ku-band satellites planned by DoS/ISRO at the time when the technology was at a nascent stage. Simultaneously, DoS/ISRO also started discussions with users including the national broadcaster for introduction of DTH services on the INSAT-system.

1.5. During 2004 to 2007, DoS entered into lease agreements with Doordarshan (DD), Dish TV, Tata Sky, Sundirect DTH (Sun DTH), BIG TV (Reliance), Airtel Digital TV (Airtel)



and D2H (Videocon) for hiring of satellite transponder capacity for providing DTH services.

1.6. The requirement for DTH service is of the order of minimum of five Ku band transponders going up to 18 to 24 transponders for providing 300 to 400 channels. Therefore, availability of Ku band transponders is the most important consideration while planning satellite capacity for DTH service. DTH service is also location specific. Since the dish antenna of the DTH customer has to be facing the satellite, satellite capacity should preferably be available at a particular position in the sky continuously. Therefore, larger number of Ku band transponders are required continuously at the same position in the sky to ensure continuity of service.

1.7. In DTH service a large number of television channels are digitally compressed, encrypted and beamed from satellites. There are four major technical stages involved in the working of a DTH service. These are:

- (i) content acquisition;
- (ii) compression;
- (iii) modulation and uplink to DTH satellite; and
- (iv) reception of signals at the users' end.

1.8. The contents of the television channels are first acquired and then compressed using a series of compression equipments. The compressed Radio Frequency (RF) signals are modulated, frequency converted, amplified and uplinked to the DTH Satellite. DTH satellites broadcast the RF signals to the '*small TV dish antenna*' fixed at the users' end. The dish antenna receives the RF signals, Low Noise Block Down Converter

converts the RF signals and set top box demodulates and decrypts these signals and the content is exhibited on the television set.

1.9. As of 2014, out of a total of 16.10 crore television homes in India, 9.30 crore (58 per cent) are covered by cable TV services, 3.70 crore (23 per cent) are covered by private DTH services and the rest (19 per cent) by IPTV services, terrestrial broadcast services and free to air DTH services of DD. With the digitalisation of cable TV services, consumers were in a position to receive 500 channels or more, including a large number of High Definition (HD) channels, which boosted the demand for satellite transponder capacities by DTH operators.

**I) Procedure of Grant of DTH License**

1.10. The guidelines for obtaining licence for providing DTH Broadcasting Service in India were formulated in March 2001 by the MoI&B. DTH services are governed by the DTH guidelines issued by the Ministry on 15.03.2001 as amended from time to time. Eligibility Criteria and other conditions for DTH license, as laid down in the DTH guidelines, are as follows:-

- Companies registered under the Companies Act are eligible to apply for DTH license;
- The applicant company must have Indian Management Control with majority representatives on the board as well as the Chief Executive of the company being a resident Indian;
- Broadcasting companies and/or cable network companies shall not be eligible to collectively own more than 20% of the total equity of applicant company at any time during the license period. Similarly, the applicant company not to have more than 20% equity share in a broadcasting and/or cable network company;
- Total FDI permitted in DTH sector is 74% with FDI upto 49% is on automatic route;
- DTH operators are required to pay ₹ 10 crore as one time non-refundable entry fee to the Ministry; and

- DTH operators are required to pay annual license fee @10% of Gross Revenue.

Procedure of grant of DTH license are as follows:

- Eligible application for DTH service will be subjected to security clearance of Board of Directors as well as key executives of the company such as CEO etc. in consultation with the Ministry of Home Affairs and for clearance of satellite use with the Department of Space;
- After these clearances are obtained, the applicant would be required to pay an initial non-refundable entry-fee of ₹ 10 crores to the Ministry of Information and Broadcasting;
- After such payment of entry-fee, the applicant would be informed of intent of Min. of I&B to issue license and requested to approach Wireless and Planning Coordination (WPC) Wing of Department of Telecommunications for SACFA clearance;
- After obtaining Standing Advisory Committee on Radio Frequency Allocation (SACFA) clearance, within one month of the same, the Licensee will have to submit a Bank guarantee (Form-C) from any Scheduled Bank to the Ministry of Information and Broadcasting (MIB) for an amount of ₹ 40 crores valid for the duration of the license; and
- After submission of this Bank Guarantee, the applicant would be required to sign a licensing agreement with the MIB.

## II) Other Conditions

1.11. DTH license shall have to comply with other conditions which *inter-alia*, include

- The Licensee shall pay an annual fee equivalent to 10% of its gross revenue as reflected in the audited accounts of the Company for that particular financial year;
- The Licensee shall also, in addition, pay the license fee and royalty for the spectrum used as prescribed by Wireless Planning & Coordination Authority (WPCA), under the Department of Telecommunications;
- The validity period of License shall be ten (10) years, on non-exclusive basis, and shall be reckoned from the date of issue of Wireless Operational License by the WPCA, unless terminated earlier for default or for insolvency or for convenience or for transfer of the License;
- The Licensee shall ensure adherence to the Programme Code (PC) and Advertisement Code (AC) of the Cable Television Networks (Regulation)

Act, 1995 and the rules framed thereunder, 1994 as amended from time to time; and

- At present, there are six private operators in addition to free DTH services of Doordarshan (DD) . As informed by the DTH operators, details of their satellites and transponders are as follows:

| DTH operators                         | No. of transponders | Name of Satellite         | Indian/Foreign    |
|---------------------------------------|---------------------|---------------------------|-------------------|
| M/s Dish TV India Ltd (Dish TV)       | 16                  | NSS-6 (12)<br>ASIASAT (4) | Foreign           |
| M/s Tata Sky Ltd (Tata Sky)           | 12                  | INSAT-4A                  | India             |
| M/s BIG TV (Big TV )                  | 9                   | MEASAT-3                  | Foreign           |
| M/s Videocon d2h Ltd (D2H)            | 10                  | Sing Tel                  | Foreign           |
| M/s Sun Direct TV Pvt Ltd (Sundirect) | 5                   | INSAT 4B (1)<br>MEASAT(4) | Indian<br>Foreign |
| M/s Bharati Telemedia Ltd (Airtel)    | 11                  | SES-7                     | Foreign           |
| Free Dish (Doordarshan)               | 6                   | INSAT 4B                  | Indian            |

1.12. As per the Telecom Regulatory Authority of India (TRAI)'s report on Performance Indicators for the period July - September, 2014 released on 29<sup>th</sup> January, 2015, there are 39.13 million registered private DTH active subscribers in the country. In addition, DD DTH platform has 8 million free DTH subscribers.

### III) Satellite Capacity Allocation

1.13. In June 2001, INSAT Coordination Committee (ICC) prescribed a back to back arrangement whereby DoS would acquire and allocate necessary transponder capacity from foreign satellites to meet the specific requirements of private customers. Antrix, after aggregating the requirements of the Indian customers, would enter into back to back agreements with foreign satellite owners for short term periods, so that the service could be brought back to INSAT system as and when Indian satellite capacity was available.

1.14. DTH service is provided on satellite Ku Band transponders provided by Department of Space (DoS). Satellite capacity allocation is done by DoS as per the provisions of policy framework for Satellite Communication in India ("SATCOM policy") administered by DoS. Allocation of Ku band transponders to DTH operators are done by DoS as per the procedure laid down in the SATCOM policy.

1.15. Although DTH sector is witnessing exponential growth over the recent, DoS has not been able to meet transponder requirements of DTH operators from the space available on the Indian Satellite. In order to meet the growing requirement of DTH operators, DoS is hiring bandwidth in Ku Band from foreign satellite through ISRO or Antix Corporation which in turn is made available to DTH operators. As per the extant policy of DoS, DTH operators are not allowed to directly contract with foreign satellite operators for transponder capacity.

1.16. Presently, DD is utilizing 6 Ku-Band Transponders for DD DTH Service, Under 12<sup>th</sup> Plan, Doordarshan's DTH Service is being expanded from 112 to 250 Channels. For this purpose, request for provision of 5 additional Ku-Band Transponders (5x36 MHz) on same orbital slot has recently been given to ISRO.

1.17. The Ministry issues licenses to private DTH operators if they fulfill the necessary eligibility criteria and have obtained clearances from MHA and DoS, SACFA & WOL of WPC. The internal procedures that govern such clearances is not dealt with by the Ministry on a case to case basis. This is the mandate of the Nodal Ministry concerned. This Ministry may, however, be involved/consulted in broad policy matters concerning such clearances. INSAT Coordination Committee (ICC) of DoS is one such forum in which this Ministry is also a member. The last meeting of the ICC was held on 12<sup>th</sup> February, 2013.

## CHAPTER - II PLANNING OF SATELLITE CAPACITY

### I) Formulation of SATCOM Policy

2.1. – In May 1997, DoS put up a cabinet note for a broader SATCOM policy, duly considering the opinion of the stakeholders through inter-departmental consultation exercise involving Department of Science and Technology, Ministry of Finance, Ministry of Industry, Ministry of Defence, Ministry of Home Affairs and Ministry of Information and Broadcasting. The proposal suggested having a 'closed sky' policy in DTH service whereby the satellite would be provided by INSAT system or an Indian satellite.

2.2. In January 2000, the Union Cabinet of India finally approved the 'open sky' policy and allowed Indian and foreign satellites to be used in DTH services with the condition that proposals envisaging use of Indian satellites would receive preferential treatment. To ensure this, ICC, in June 2001, prescribed a back to back arrangement whereby DoS would acquire and allocate necessary transponder capacity from foreign satellites to meet the specific requirements of private customers. Antrix, after aggregating the requirements of the Indian customers, would enter into back to back agreements with foreign satellite owners for short term periods, so that the service could be brought back to INSAT system as and when Indian satellite capacity was available.

### II) Planning and Realisation of DTH Satellites

2.3. Till July 2011, 6,000 transponders were available the world over, of which India had 200 transponders. DTH services were provided through Ku band transponders. A 3,000 kg communication satellite could carry upto 24 Ku band transponders. The requirement for DTH service is of the order of minimum of five transponders (180 MHz) going up to 18 to 24 transponders for providing 300 to 400 channels. Therefore,

availability of Ku band transponders was the most important consideration while planning satellite capacity for DTH service.

2.4. During the oral evidence, the Secretary, DoS informed the Committee about the number of transponders as under:

"Notwithstanding this situation today also if you look at we have our own about 105 KU Band transponders actually in orbit. We have a complex centre play of environment and the difficulty in getting through the various processes. Apart from DTH users we also have to meet the requirement of our strategic users and societal application thing".

2.5. Further, supplementing on the above, the Secretary, MoI&B submitted as under:

"The DTH services are governed by the DTH guidelines, which had been issued by the Ministry in 2001, and awarded from time to time and at present, six private DTH operators are operating in the country. My colleague from the Department of Space has already flagged this. In DTH service, TV channels are distributed directly to subscriber using Ku-band transponders on satellite. An allocation of Ku-band transponders to DTH operators is done by the Department of Space. We have spelt it out in our report which has been submitted to your office. The Ministry has already granted permission to about 830 TV channels. About fifty per cent are news and current affairs channels and the rest are general entertainment channels. But if you just see the landscape and the way the expansion is taking place, there are about 250 applications which are still pending with the Ministry. They are at various stages of processing. So, in effect, maybe, in another one or two years you will have about more than 1000 odd TV channels which will be operating in the country. Now DTH operators, including DD, have been demanding additional Ku-band transponders from the Department of Space. But this is a policy which is decided by them. There is no coordination or intervention at the level of Ministry of Information and Broadcasting. If you see the overall nature of delivery platform, we find that the total number of subscribers of private DTH and IPTV is about 43 million, which is 27 per cent of the total landscape of TV. Coming to Cable TV network, about 88 million people are hooked on to Cable TV comprising 55 per cent of the total landscape. DD Terrestrial is about 13 per cent".

2.6. DTH service is location specific. Since the TV dish antenna of the DTH customer has to be facing the satellite, satellite capacity should be available at a particular position in the sky continuously and permanently. Any change in the position of the satellite would result in migration expenses to the DTH service provider and inconvenience to the

customer. Therefore, additional Ku band transponders were required to be provided continuously at the same position in the sky to ensure continuity of service.

### III) Deficiencies in Launching Planned Satellites

2.7. During March 2004 to February 2007, total satellite capacity of 52.5 to 80.5 Ku band transponders was committed by DoS to seven DTH service providers in transponder lease agreements signed with them. DoS could not provide satellite capacity (Ku band transponders) on domestic satellites as planned, as it was not able to realize its planned communication satellites.

2.8. The following table shows satellite capacity committed by DoS to service providers in chronological order:

| Sl. No. | Service provider | Date of agreement | Satellites planned to be used | Number of transponders committed (Range from - to) | Number of transponders actually allocated as of July 2013 | Satellites actually used | Date of commencement of service |
|---------|------------------|-------------------|-------------------------------|--|---|--------------------------|---------------------------------|
| 1.      | DD               | 18 March 2004     | INSAT-4A/4B                   | 6  | 6   | INSAT-4B                 | 15 July 2004                    |
| 2.      | Dish TV          | 27 May 2004       | NSS-6                         | 6.5  | 12<br>6   | NSS-6<br>Asiasat         | 1 June 2004                     |
| 3.      | Sun DTH          | 19 February 2005  | INSAT-4B                      | 4-9  | 1<br>4  | INSAT-4B<br>MEASAT       | 15 January 2008                 |
| 4.      | Reliance         | 28 June 2005      | GSAT 8                        | 6-18   | 9   | MEASAT                   | 15 April 2008                   |
| 5.      | Tata Sky         | 12 November 2005  | INSAT-4A                      | 12-18  | 12  | INSAT-4A                 | 1 May 2006                      |
| 6.      | Airtel           | 26 December 2006  | GSAT 8                        | 12-15  | 11  | SES                      | 1 Jan 2008                      |
| 7.      | Videocon         | 27 February 2007  | GSAT 8                        | 6-8  | 15  | ST                       | 1 Feb 2008                      |

2.9. As per Audit, DoS could not provide satellite capacity (Ku band transponders) on domestic satellites as planned. This was a consequence of DoS not being able to realise its planned communication satellites.



2.10. Subsequently, when enquired whether DoS had been able to plan and subsequently, realize satellite capacity for DTH service as envisaged, the Ministry in their written submission stated that:

"Planning for transponder capacity was taken up immediately after the Government approved the introduction of DTH services in November, 2000 and this included the initiatives to conduct the experiments using INSAT-3A Satellite after it was launched in year 2003. Ku-band Transponder capacities envisaged as part of 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> Five Year Plan (FYP) are summarised in the Table-1 below. The detail of the communications satellites, planned during this period are shown in Table-2 along with the relevant details such as orbital slot, number of Ku band transponders, date of project approval and date of realization. Approval was obtained for three satellites with a total capacity of 36 transponders during the 10<sup>th</sup> Five Year Plan period comprising INSAT-4A and INSAT-4B in March, 2003 followed by INSAT-4C in February, 2004. It is also evident from Table-2 that the planned capacities were realised with a small delay of about one year in case of INSAT-4A and INSAT-4B. In the case of INSAT-4C the satellite could not be deployed due to launch failure in July, 2006, but the replacement satellite INSAT-4CR was planned on a war footing and deployed within a year in July, 2007. During the 11<sup>th</sup> Five Year Plan period, GSAT-8, GSAT-9 and GSAT-10 were planned with a combined capacity of 48 transponders out of which GSAT-10 and GSAT-8 have been realised. There were delays due to non-availability of the indigenous launch vehicle GSLV and due to time needed for effecting correction as a result of power problems observed in INSAT-4B satellite. GSLV launch vehicle delay was due to challenges in realizing indigenous cryogenic technology in building/launching indigenous GSLV launch vehicle.

Table 1

Summary of bent-pipe Ku transponders that could support DTH service

| Plan period          | Planned | Approved | Realised |
|----------------------|---------|----------|----------|
| 10 <sup>th</sup> FYP | 60      | 48       | 36       |
| 11 <sup>th</sup> FYP | 102     | 48       | 36       |
| 12 <sup>th</sup> FYP | 78      | 54       | 18       |

Table-2

Satellites planned with High power Ku band transponders by DoS which could be used for DTH

|  | Satellites | Orbital Slot | No of Ku band Tx's | Date of approval    | Planned realisation      | Actual Status                          | Remarks   |
|--|------------|--------------|--------------------|---------------------|--------------------------|--|---|
| To be realized during 10th FYP 2002-2007 | INSAT-4A   | 83° E        | 12                 | March, 2003         | 20 months                | Launched in Dec, 2005                  | Delayed by one year.  |
|  | INSAT-4B   | 83.5° E      | 12                 | March, 2003         | 12 months after INSAT-4A | Launched on March, 2007                | Delayed by three months   |
|  | INSAT-4C   | 74° E        | 12                 | Feb, 2004           | 18 months                | Failed launch in July, 2006.           | Launch Failed   |
|  | INST-4CR   | 74° E        | 12                 | Jan, 2007           | Replacement for 4C       | Launched in July, 2007                 | Planned and realised within one year of failure of INSAT-4C launch.   |
| To be realized during 11th FYP 2007-2012 | GSAT-8     | 55° E        | 24                 | Oct, 2006           | 24 months                | Launched in May 2011                   | Delayed by 2 1/2 years due to configuration change                    |
|  | GSAT-9     | 48° E        | 12                 | Jan, 2008           | 26 months                |  | Not launched due to non availability of GSLV launch vehicle           |
|  | GSAT-10    | 83° E        | 12                 | Oct, 2009           | 20 months                | Launched in Sep, 2012                  | Delayed by 1 year 3 months, due to realization dual gridded reflector |
| To be realized during 12th FYP 2012-2017 | GSAT-15    | 93.5° E      | 18                 | July, 2013          | 18 months                | Planned to be launched in October 2015 | Delay by 9 months to match the launch slot with Ariane.               |
|  | GSAT-16    | 55° E        | 12                 | July, 2013          | 24 months                | Launched in December, 2014             | Six months ahead of schedule.   |
|  | GSAT-14    | 74° E        | 6                  | Jan, 2012           | 18 months                | Launched in Jan, 2014                  | Launched with GSLV launch vehicle.                                    |
|  | GSAT-18    | 74° E        | 12                 | Put up for approval |                          |  | Put up for approval   |

According to the Audit, from the above facts it is evident that DoS was able to plan and realise satellites as envisaged during the 10<sup>th</sup> FYP period. However, on account of technical constraints, all missions could not be realized in the 11<sup>th</sup> FYP".

2.11. During oral evidence, the Secretary, DoS submitted as under:

"The commercial satellites are around 15. Right now, over India, we have about 45 transponders of ASIASAT. About capacity, we will find out and give you".

2.12. Further, when asked whether satellite capacity allocated by DoS for DTH service was transparent, fair and equitable:

"DoS replied that the process adopted by DoS to meet the demands of DTH service providers has satisfactorily met the initial requirements of all the operators, through indigenous or leased transponder capacity. Requests for DTH services in India started with requests from Tata Sky, Dish TV, and Doordarshan. While discussions with all the three service providers was in progress Dish TV and Doordarshan started testing by making use of the available transponders on INSAT-3A itself. DTH service demanded 52 dBW of satellite transponder power whereas INSAT-3A had 46 dBW. DoS/ISRO had planned for 52dBW Ku band transponder capacity in INSAT-4A, INSAT-4B and INSAT-4C. In view of the demand from Dish TV and Doordarshan to start the services early they were enabled to begin their services through leased capacity of NSS-6, in 2004 without waiting for INSAT-4A. Tata Sky requirement was met with INSAT-4A after its launch in 2005. Immediately after the completion of initial lease period of 3 years, Doordarshan DTH service was brought back to INSAT-4B as planned. In view of the larger capacity requirement Dish TV continued their service on NSS-6".

2.13. On being asked about whether transponder lease agreements entered into by DoS with DTH providers safeguarded the financial interest of the Government and were implemented accordingly:

"DoS submitted that the transponder lease agreements entered into with DTH operators safeguarded the financial interests of the Government by fixing the transponder price through a Pricing Committee of DoS which accounted for cost of realisation and internal rate of return while leasing transponder capacity from foreign satellites, financial safeguards were ensured by adopting a process of agreements with the satellite operators and the DTH operators, on commercial arrangements through Antrix Corporation Ltd, the commercial arm of ISRO".

#### **IV) Inability to Realise Satellites with Ku Band Transponders**

2.14. During the Eleventh Five Year Plan (2007-12) period, DoS planned to launch nine satellites with an aggregate of 218 Ku band transponders for various applications, including DTH. Of the nine satellites, two satellites (GSAT-8 and GSAT-15) were earmarked for DTH applications. Out of nine satellites planned, DoS could eventually realize only three satellites with 48 Ku band transponders during Eleventh Plan period,

which was only 22 per cent of the target. Two satellites, namely GSAT-9 and GSAT-15 were not launched citing non-availability of launch vehicle GSLV, although two other satellites, viz. GSAT-8 and GSAT-10 were realized through procured launches.

2.15. While agreeing to the inordinate delay in realization of satellites in Eleventh Five Year Plan period, DoS stated that in December 2012, Dr. Kasthurirangan Committee's recommendations were available only in April 2011 and not at the beginning of Eleventh Plan. DoS further stated that the procured launch vehicle route was not cost effective for 2,000 kg class of satellites. DoS added that in March 2014 surrender of funds were due to budget cut imposed by Ministry of Finance.

2.16. Further, in September 2013, DoS had explained that huge surrenders were due to revision of budget provision brought about by complex nature of space technology and developmental uncertainties taking into account development status of the projects.

2.17. During oral evidence, the Secretary MoI&B stated as under:

"The issues which are concerning DTH operators are that they want definitely more transponder capacity. As per the latest data, which we have received from the DTH operators, the Dish TV, for example, is having roughly 16 transponders. Tata Sky has 12. The Dish TV has it on the foreign satellite. Tata Sky has on Indian satellite. Reliance Big TV has nine transponders on foreign satellite. Videocon has 10 transponders on foreign satellite. Sun Direct TV has five transponders on Indian and foreign satellites; one on Indian and four on foreign. Bharti Telemedia Limited also has 11 transponders on foreign satellite. DD Free Dish has six transponders on Indian satellite. This demand is repeatedly growing. If you see the overall breakup of the charges which are paid for the satellite transponders to the Department of Space, last year itself it ran into a total of about ₹ 539.62 crore".

2.18. As per Audit, DoS failed to provide satellite capacity (Ku band transponders) on domestic satellites as it was not able to realize the communication satellites as planned. Out of nine satellites with an aggregate of 218 Ku band transponders planned for launch during Eleventh Five Year Plan period, DoS could eventually realize three satellites with

48 Ku band transponders, which was only 22 per cent of the target. When asked about the reasons for non realization of the satellite capacity and did the DoS take any emergent measures to realize the satellite capacity as planned:

"DoS stated that it may be noted that Ku band bent-pipe transponders can be used for multiple services like DTH, V-SAT, DSNG, etc. Out of the 218 transponders, those planned on ACTS-1 & ACTS-2 (104 transponders) were intended for V-SAT services. INSAT-4CR with 12 Ku band transponders (which was realized on a fast track mode to mitigate the impact of loss of INSAT-4C due to GSLV-F03 launch failure) is a spillover from 10<sup>th</sup> FYP. In view of multiple failures encountered in GSLV-MkII resulting in non-availability of indigenous launchers for communication satellites and inability to secure adequate coordinated orbital spectrum, Government approvals could be processed only for GSAT-8, GSAT-9 and GSAT-10 and others got delayed. While 36 Ku transponders were realized through GSAT-8 and GSAT-10 and with procured launches, 12 transponders on GSAT-9 were not realized in view of non-availability of GSLV launch vehicle. Subsequently, with the launch of GSAT-14 and GSAT-16, another 18 Ku transponders were realized. With GSAT-15 due for launch in 2<sup>nd</sup> half of 2015, another 24 Ku transponders will be available. Thus, a total of 78 Ku band transponders will be available by end of 2015. Further, GSAT-9 with 12 Ku transponders and GSAT-18 with 12 Ku transponders (being realized in 12<sup>th</sup> FYP) will increase to a capacity of 102. In order to address various issues related to communication satellite service availability, Dr. K. Kasturirangan Committee was constituted to recommend suitable measures".

**V) Forced Migration of DTH Service Providers to Foreign Satellite Systems**

2.19. According to the Audit, DoS was unable to maintain the satellite capacity already being used for DTH service due to technical problems, using these capacities to substitute for satellites being de-commissioned, etc. DoS could not satisfactorily fulfill the competing needs of critical, strategic and commercial sectors, which led to a forced migration of commercial DTH users (Sun DTH, Airtel and Reliance) to foreign satellite systems. GSAT-8 satellite was committed through firm transponder lease agreements for Reliance, Airtel and Videocon. GSAT-8 was planned in 2007 but it was actually launched in May 2011, after delay of more than three years. Subsequently, Airtel was allocated capacity on INSAT-4CR and in 2008 Reliance and Videocon moved to foreign satellites MEASAT and ST respectively. Due to de-commissioning of two satellites,

Edusat in September 2010 and GSAT-2 in March/April 2011, Airtel was vacated from INSAT-4CR in order to accommodate the services of these satellites and to meet their additional capacity requirements. INSAT-4B allotted for Sun DTH. Four transponders of INSAT-4B were switched off in July 2010 due to power problems in the satellite. In September 2010, Sun DTH consequently moved to foreign satellite, MEASAT-3. Planned DTH Satellites GSAT-9 (spare) and GSAT-15 (DTH applications) could not be launched due to non-availability of indigenous launch vehicle, GSLV.

2.20. DoS attributed (June 2010/March 2014/June 2014) the delay in launch of GSAT-8 to changes in design of the satellite and modifications carried out in its solar array system and associated power systems, which were prompted due to failure of the power systems reported in two other satellites viz. W2M-22 and INSAT-4B. DoS added that after examining the prevailing situation in 2011 when GSAT-8 was finally launched, ICC decided to allot transponders of GSAT-8 to more important national and government services, which could only be met through INSAT/GSAT capacity. DoS also stated that failure of INSAT-4B and GSLV were unexpected contingency situations. DoS further stated that best efforts were being made such as accelerated realisation of increased number of high power satellites to support DTH services and procured launches, augmentation of capacity, etc., for enabling it to cater to demands of all kinds of services including DTH.

2.21. During oral evidence, the Secretary DoS supplementing the above submitted as under:

"Sir, the DTH itself started in the late 90s. So, the kind of high power that was required was also stated around that time. We started our first high capacity in INSAT-4A. Up to INSAT-3 while we had a transponder its power was much less. Even the others had just started. It was not very much earlier. It was a matter of five years".

2.22. Further, he submitted that:

"What we did further actually we launched GSAT-16 in December last year and GSAT-15 is getting ready for launch in the last quarter of this year. These we are trying to do through procured launchers because they are in the three-and-a-half tonne capacity. GSAT-17 and GSAT-18 will also ensure certain capacity. It is going through the process of the final approvals of the Government. They will come up and will be in orbit before the end of next year. So, with these things the overall capacity availability will be significant. Even after covering for this, the capacity that is available we will be in a position to reorganize and re-position some of the satellites and in principle can bring back the capacity which we have given through the foreign satellite".

2.23. The Secretary, DoS also submitted that:

"We did try to launch, for example INSAT-4C which was supposed to be launched by our own launcher. That launcher failed and the satellite did not go into space. We replaced it with INSAT-4GR within about a year-and-a-half time from that failure and we were able to put it up because we did it on our PSLV launcher. But with respect to other satellite realisation we also had to go through a large amount of technology development and then ensure that the failures which we have seen on the satellite which were launched are not going to recur".

2.24. As per Audit, in spite of having sufficient funds, DoS did not consider procured launches for its ready satellites or acquire satellites in orbit and position it under the orbital slot coordinated by India. When asked to specify as to what prevented them from launching from foreign satellite vehicles and acquiring satellites:

"DoS replied that during the 11<sup>th</sup> FYP, three satellites carrying Ku band transponders were planned to be launched using the indigenous GSLV-MkII and two satellites using GSLV-MkIII launch vehicles. While weight class of two satellites planned for GSLV-MkIII (GSAT-10 & GSAT-15) was economically viable for procured launch and the same was pursued. It may also be noted that a committee under the Chairmanship of Dr. K Kasturirangan was formed after GSLV failure, to suggest the measures to minimize the impact of failure on GEOSAT program road map in the year 2011. The recommendations of this Committee, among other things, include launch of satellites on procured vehicles as an interim measure. This is being implemented in 12<sup>th</sup> FYP. Acquiring in-orbit foreign satellite(s) for positioning in Indian orbital slot is not technically feasible as:

- The coverage do not match to Indian co-ordinates leading to significantly compromised performance; and
- The transponder design parameters like frequency plan, coverage, roll-off, EIRP etc will be as per original operator's requirements

optimized for operation from their own slot. Hence it is not possible to meet the performance & co-ordination requirements of Indian slots.

In spite of this, an attempt was made to source foreign satellites in orbit, for Indian use through RFP. However, this attempt turned out to be futile".

2.25. Audit stated that DoS was unable to maintain the satellite capacity already used for DTH Service due to technical problems, using these capacities to substitute for satellites being de-commissioned, etc. When the Ministry was asked to clarify the technical problems for maintenance of the satellite capacity:

"DoS clarified that the first generation of Ku-Band DTH satellites were built during 10<sup>th</sup> FYP, namely INSAT-4A, 4B & 4C. Issues of high power handling, on-board thermal management, and performance of dual-gridded antenna over large temperature excursions encountered in orbit posed technological challenges. Similar issues resulting in operational constraints are faced in satellites made by others also".

2.26. On being asked as to what prevented DoS from not satisfactorily fulfilling the competing needs of critical, strategic and commercial sectors, which led to a forced migration of commercial DTH users (Sun DTH, Airtel and Reliance) to foreign satellite systems:

"DoS answered that as per the Norms, Guidelines and Procedures for Implementation of the Policy Framework for Satellite Communications in India approved by the Cabinet in the year 2000, INSAT capacity comprises of capacity on indigenous INSAT/GSAT satellites and capacities leased on foreign satellites. Accommodating the service providers (Sun DTH, Airtel DTH, Reliance) through leased capacity was necessitated to by:

- (a) Unexpected power anomaly on INSAT 4B – M/s Sun DTH;
- (b) Additional capacity requirements – M/s Airtel DTH; and
- (c) Delay in launch of GSAT-8- M/s Reliance

The demand from strategic and societal applications originated from Government users and these demands had to be met only from the satellites built by DoS/ISRO and were therefore accorded priority on satellites built by DoS/ISRO. DTH operators, on the other hand, were largely in the commercial private sector and their demands at specific orbital slots, was higher than the available capacity and hence they were accommodated on leased capacity from foreign satellites".



VI) Capacities Created Remained Idle

2.27. GSAT-8 was planned to meet the transponder commitments made to Reliance and Videocon, the satellite launch was delayed by more than three years with the result that the service providers moved to foreign satellites. In May 2011, when satellite capacity was eventually available in GSAT-8, the capacity was not earmarked and remained idle. In December 2011, the satellite was finally allocated for non-DTH use (strategic and government users).

2.28. The 12 Ku band transponders of INSAT-4A satellite were allotted to Tata Sky on an exclusive basis. At the instance of Tata Sky, in September 2012, DoS launched GSAT-10 satellite having 12 Ku band transponders and positioned it at the same orbital slot (83° east) as that of INSAT 4A with the intention of swapping the 12 transponders of INSAT-4A with 12 transponders in GSAT-10. Tata Sky, which was initially willing to swap the transponders of INSAT-4A with GSAT-10, subsequently in July 2013 declined the proposal on the ground that swapping would not provide additional capacity required by them. Apprehending litigation from Tata Sky, DoS did not allocate capacity on GSAT-10 to any other service provider and entire 12 Ku band transponders capable of generating huge revenue remain idle (January 2015) since its launch in May 2011.

2.29. In March 2014, DoS replied that Ku band capacity in GSAT-10 was treated as spare capacity with appropriate approvals. As per Audit, the reply is not acceptable, as spare capacity of Ku band on GSAT-10 was not a planned option, but a fall back option since Tata Sky was given exclusive first right of refusal on INSAT-4A. Pending Tata Sky's decision, the 12 transponders could not be utilized otherwise, with the implied pecuniary loss to the public exchequer. Audit further observed that allocation of satellite capacity being the responsibility of ICC, the decision to keep satellite capacity as spare was taken without the specific approval of ICC.

2.30. Audit observed that satellite launch of Geo Stationary Satellite (GSAT-8) initially intended for DTH use was delayed by more than three years. When satellite capacity was eventually available, it was not immediately earmarked and capacity remained idle from July 2011 to December-2011. The satellite was finally allocated for non-DTH use. When asked about the reasons for the delayed launch of GSAT-8:

"DoS replied that initially, GSAT-8 satellite was planned with 18 Ku band transponders to match with the coordinated spectrum at that point of time. Later, it was decided to increase the transponders from 18 to 24 in view of enhanced coordinated spectrum available. In addition, some corrective measures were to be incorporated in the power system of the satellite based on the experience of anomalies in the on-orbit satellites. Hence the realization of GSAT-8 was delayed".

2.31. When asked why wasn't the satellite capacity earmarked & remained idle when it was specifically intended for DTH use:

"DoS replied that it may be noted that the Ku Band Transponders design of GSAT-8 can cater to DTH as well as V-SAT (e-Governance, Armed forces, Banking etc) services. When GSAT-8 was realized in orbit, the DTH requirements were already catered to and there was no demand for DTH service at particular orbital slot. Hence GSAT-8 capacity was utilized by government users as the demand for government was higher".

2.32. Further, it was enquired that why was the satellite allocated for non DTH use:

"DoS reiterated that the DoS caters to strategic and societal requirements of Government in addition to DTH services. The demand from critical national and government services including armed forces can be met only through capacity on satellites built by ISRO. Therefore the capacity available on GSAT-8 was allotted to government users".

2.33. As highlighted by Audit, DoS Launched GSAT-10 satellite in order to swap with capacity allocated to Tata Sky on INSAT-4A, which was functioning with reduced power. Tata Sky subsequently declined the proposal but DoS did not allocate capacity on GSAT-10 to any other service provider apprehending litigation, as Tata Sky was given exclusive first right of refusal on Ku band capacity of INSAT-4A. On being asked as to why did Tata Sky decline the allocated capacity when it was given preferential treatment and why were

the exclusive rights accorded to a private party in violation of principle of non-exclusiveness of ICC DoS replied that:

"that it may be kindly noted that as per the approval obtained, DoS launched GSAT-10 satellite in order to replace the aging INSAT-2E, INSAT-3B and to create additional capacity for growth and also to provide on-orbit back up to GPS Aided Geo Augmented Navigation (GAGAN). The capacity of 12 Ku transponders on GSAT-10 was meant for replacing the traffic of INSAT-3B and to provide additional capacity to meet the increased demand of DTH operators for additional transponders. Hence, it is not appropriate to say that GSAT-10 satellite was launched in order to swap with capacity allocated to Tata Sky on INSAT-4A. Tata Sky were planning to expand their network and were expecting increased number of transponders available from the operating orbital slot. Hence, they were not in favour of only swapping 12 transponders from INSAT-4A to GSAT-10. Taking into account the coordinated bandwidth in any given orbital slot we can operate a maximum of 24 Ku transponders. As pointed out by the C&AG in its report, DTH services require a capacity of 12 - 24 Ku-band transponders at a single orbital location to expand services. In view of this any additional capacity available at the same location will be an essential requirement for the service provider. Hence making additional capacity available for DTH providers cannot be construed as exclusive offer".

2.34. When asked why no formal amendment was effected when Tata Sky had agreed to relinquish the first right of refusal on the orbital slot in a meeting held on July 2013:

"DoS replied that as the process of finding the solution envisaged in the meeting held on July, 2013, is still in progress, the formal amendment has not yet been signed".

#### **VII) Dominance of Foreign Satellites Over Indian Sky**

2.35. Audit stated that a comparison of demand met through INSAT systems against the foreign satellite systems showed that initially during 2006 to 2009, major portion of services were being provided through Indian satellite capacity. Thereafter, INSAT transponders providing DTH service reduced from 30 units to 19 units in 2013 and beyond. There was a progressive increase in dependence on foreign satellite systems from 6.5 units in 2004 to 57 units in 2013. Based on the assessment of demand in DTH sector, a demand analysis was prepared by Department of Space in May 2013. According to these estimates, the demand was expected to increase to over 200 units beyond the year 2013, which was planned to be met almost entirely through foreign

satellite systems. Although there were requests for satellite capacity from INSAT system, DoS did not consider these on the ground that these satellite capacities were not feasible to be realized in near future.

2.36. Thus, inability to create and maintain planned capacity for DTH services along with increased dependence on foreign satellite systems even for future needs may eventually lead to a situation in which only 10 per cent of the Ku band requirement for DTH services will be provided by Indian satellites resulting in loss of opportunities for revenue generation and strategic interests.

2.37. In March 2014, DoS stated that to overcome the shortage in Ku band transponders, best efforts were being made in accelerated realization of increased number of high power satellites to support DTH like services, procured launches and augmentation of capacity. DoS added that this coupled with revised policy for transponder allocation and pricing for which approval was awaited from Cabinet, it would be able to cater to the demand for all kind of services including DTH sector.

2.38. Audit observed that though DoS had the foresight to recognize the risks of implementing an open sky policy for allocation of satellite capacity for DTH services in protecting strategic interests, challenges to development of Indian space sector and business opportunity, etc., yet it was unable to develop a strategy and implement a plan to offset these risks.

2.39. As highlighted by Audit, out of the total 76 Ku band transponders used by Indian DTH operators in July 2013, only 19 transponders (25 per cent of total) belonged to Indian satellites. The remaining 57 transponders (75 per cent of total) were on foreign satellites. Tata Sky, which was using 12 transponders in the INSAT system, had also decided in July 2013 to migrate to foreign satellites arrangement as a permanent

measure. As such, only 10 per cent of the satellite capacity for the DTH service would be serviced by INSAT system. The future requirement of transponders for DTH services was also planned to be met largely from foreign satellite. When asked to specify the exact reasons as to why the DTH service providers were using foreign satellites and the details of the satellite launches planned in next seven years and Ku band capacity that would be available through them:

"as per SATCOM policy frame work approved by Cabinet in year 2000, the indigenous as well as leased transponders are part of INSAT system. DTH demand for transponders in the country witnessed large growth in a short period as compared to the world DTH market. DTH operators wanted to start their services as early as they could. In such a situation, the options available for DoS were to:

- (a) accommodate DTH services by allotting the capacity available on satellites built by ISRO; or
- (b) lease foreign satellite capacity temporarily to accommodate DTH services.

Tata Sky DTH, Airtel DTH, Sun DTH and DD DTH were successfully accommodated in satellites built by ISRO and Videocon, Reliance and Dish TV in foreign satellite in the year 2009. Accommodating the service providers (Sun DTH, Airtel, Reliance) through leased capacity was necessitated by:

- (a) Unexpected power anomaly on INSAT 4B – M/s Sun DTH;
- (b) Additional capacity requirements – M/s Airtel; and
- (c) Delay in launch of GSAT-8- M/s Reliance

In the immediate future it is planned to launch four satellites carrying Ku band transponders. Out of these GSAT-15, GSAT-18 and GSAT-9 will add 48 Ku band transponders and GSAT-11 (a high throughput satellite with multi-beam coverage) will provide 10 Gbps capacity for supporting V-SAT/broadband applications. Beyond 2017, future satellites will be envisaged as part of 13<sup>th</sup> FYP and the process of identifying satellite and payload composition for each satellite is under progress. DoS is exploring to take appropriate measures to bring the DTH operators back on satellites built by ISRO and address various issues of providing the requisite capacity to various services in broadcasting and telecom sectors".

**IX) Crowding of Foreign Satellites in Orbital Slots Above India**

2.40. Orbital slot is the position of a geo-stationary satellite above earth. Member countries under the framework of United Nations acquire these orbital slots through a coordination-process at International Telecommunication Union (ITU). Any country desirous of providing satellite based services within its national boundary must obtain the approval of the ITU for operating a communication satellite in a particular orbital slot. The orbital slots positioned above a country are convenient for its application and called country specific slots for each country. The regulation towards operating a satellite is governed by the following criteria:

- Any country can cover any region of the world and the requests are recorded in ITU on 'first-come-first served' basis;
- Coordination with neighbouring satellites as identified by ITU is required to be completed;
- After coordination of the orbital slot, member countries should put their satellites in the designated orbital slots and spectrum filed should be brought to use within the 'due diligent' period of seven years from the date of filing the first request; and
- The satellites should be operated continuously in a coordinated orbital slot without any discontinuity. The maximum discontinuity allowed would be three years and the position needs to be informed to ITU.

Thus, ITU coordination involving satellite bands at ITU level is a lengthy process requiring considerable lead time. This, together with the necessity to maintain the satellite fleet for long period without any discontinuity etc., makes the orbital slot a scarce and valuable resource.

2.41. India specific orbital slots are located between 40° and 120° east. DoS had successfully placed five Indian satellites viz. INSAT-4A, 4B, 4CR, GSAT-8 and GSAT-10 at orbital slots 83°, 93.5°, 74°, 55° and 83° east respectively. Of these, only INSAT-4A and 4B provided capacity for commercial DTH service. As such, Indian administration needed to coordinate adequate number of Ku band orbital slots in the sky. DoS could not

achieve the targeted Ku band capacity to meet its commitments for DTH service providers during Eleventh Five Year Plan (2007-12) at the critical point when the DTH services were being introduced in India under the umbrella of 'open sky' policy. It was a fortuitous turn of events for the foreign satellite owners, who were ready at the opportune time to place their satellites over five orbital slots in Indian skies for providing DTH services in India. The five foreign satellites viz. NSS-6, Measat-3, SES-7, ST-2 and Asiasat-5 were providing DTH service and were positioned at 95°, 91.5°, 108.2°, 88°, 100.5° east respectively.

2.42. Audit noted that leasing of another foreign satellite Asiasat-7 in the orbital slot 83° was also under active consideration of the ICC in July 2012. However, due to the strong views of MoI&B against placement of a foreign satellite Asiasat-7 in the Indian orbital slot, it was ultimately decided not to proceed with leasing of the foreign satellite.

2.43. With the increased dependence on foreign satellite systems for DTH service, there was a crowding of foreign satellites over Indian skies, which had the following implication:

*"Increased competition for orbital slots over Indian Skies: DTH service providers were using 57 Ku band transponders of five foreign satellites against 19 transponders in three Indian satellites. With the exit of Tata Sky, the foreign satellite utilization which is presently 75 per cent, would be more than 90 per cent. DoS had also conceded that Ku band satellite capacity for DTH services from Indian satellites were not feasible in the near future and had planned to meet the future demand also from foreign satellites".*

2.44. DoS replied that in March 2014, the orbital slots and coordinated space spectrum resources belonging to India will continue to remain with India and be available for various services as long as INSAT satellites were operated therein irrespective of the capacities leased by India from foreign satellites for DTH.

2.45. Audit observed that crowding of foreign satellites and steady business opportunity to foreign satellite owners would result in continued priority for them in their slots and

efforts to protect Indian coordinated spectrum and additional coordination would be a difficult exercise.

2.46. Audit was of the view that there was a need for the coordination of more number of orbital slots. The foreign satellite owners would continue to provide satellites in their orbital slots since their satellites continue to get business from India. The need was for DoS/ISRO to aggressively capture DTH business opportunity in India in view of preferential treatment given to Indian satellite as per SATCOM policy.

2.47. DoS, therefore, needed to plan and coordinate more number of Ku band orbital slots and satellites to bring back those DTH service providers to INSAT system that had moved to foreign satellites. However, as DoS had already planned future DTH requirement from foreign satellites it needs to work out medium term and long term strategy to avoid monopoly of foreign satellites. DoS, however, did not indicate medium term and long term strategy, but stated in March 2014 that the process of coordinating additional orbital slot/spectrum was a continuous process and was being handled by DoS on a continuous basis based on the demand, future technology advances and DoS plans.

2.48. As per Audit, non-achievement of targetted Ku band capacity to meet its commitments for DTH service providers was fortuitous for the foreign satellite owners, who were ready at the opportune time to place their satellites over five orbital slots in Indian skies for providing DTH services in India, thereby, crowding of foreign satellites over India consequently increasing the demand for orbital slots affecting INSAT system.

On being asked whether the Ministry is contemplating any measures for achieving targeted Ku band capacity resulting in availability of strategically important slots of India: the Ministry replied that Geo-stationary orbital slots can be coordinated under International Tele-communication Union (ITU) over any region and in any frequency band



through ITU coordination process, on the basis of first-come-first-served principle. However, downlink rights are governed by country specific regulations. To enable the DTH service providers to operate over Indian region DoS went through the process of leasing transponders from foreign satellite service providers whenever the capacity in the indigenous system was inadequate. It may be noted that no new foreign satellite was moved over to the orbital locations in order to enable the operation of the DTH service through leasing process. DoS/ISRO is making all its efforts to strengthen INSAT system in the country to enhance the Ku band capacity.

2.49. When asked as to how does the DoS plan to protect Indian coordinated spectrum and additional coordination between INSAT satellites as a result of crowding of foreign satellites in orbital slots above India:

"DoS replied that coordination between existing adjacent satellites of different countries and fresh coordination by any country are governed through International Telecommunication Union (ITU) by means of well established Radio Regulation procedures. DoS/ISRO is planning to follow such well established procedure".

**X) Inability of DOS to Bring Back DTH Service Providers to INSAT System**

2.50. The arrangement of foreign satellite capacity to Indian DTH industry was envisaged to be a short term measure to ensure that the service could be brought back to INSAT system as and when Indian satellite capacity was available. To ensure that INSAT system gets priority over foreign satellite system, ICC put in place a back to back arrangement mechanism so that service providers who had moved to foreign satellite system could be brought back.

2.51. However this arrangement did not work favourably for DoS due to the following reasons:

- (a) *Failure of DoS in creating/maintaining capacities:* DoS could not realise its communication satellites in time. Due to these problems, most of the DTH

service providers such as Reliance, Videocon, Sun DTH and Airtel moved to foreign satellites. These DTH service providers later did not prefer to return to INSAT system due to trust deficit that was created.

These DTH service providers later did not prefer to return to INSAT system due to trust deficit that was created due to the following circumstances:

- (i) Reliance and Videocon, after waiting for the launch of GSAT-8 satellite, moved to foreign satellites since GSAT-8 was delayed by more than 3 years;
  - (ii) Airtel was forced to vacate INSAT-4CR to accommodate social networks of ISRO with the result that Airtel also moved to foreign satellite capacity; and
  - (iii) Tata Sky, the major non Government DTH service provider in the INSAT system had also decided to move to a foreign satellite. With this, more than 90 per cent of the satellite capacity requirement of Indian DTH service would be serviced by foreign satellites.
- (b) *Inherent issues in Migration:* DTH service is 'location specific' and requires that satellite capacity should be available at a particular position in the sky only. Any change in the position of the satellite would result in migration expenses to the DTH service provider besides causing re-orientation of dish antennas by a large number of users. The additional investment would be to the tune of ₹ 60 crore approximately. Therefore, bringing back of service providers from foreign satellite to INSAT system would be an improbable and difficult exercise. Back to Back arrangement was put in place by ICC to ensure that INSAT system get preference to foreign satellite system as provided in SATCOM Policy. DTH service providers had to be moved to foreign satellite systems due to delayed launch of GSAT-8. Eventually, when GSAT-8 was launched in May 2011, though satellite capacity was available with DoS, it was not earmarked though meeting of ICC was convened in July 2011. Around the same time, lease agreements of at least three service providers had expired or were due to expire. DOS did not even attempt to bring the service providers back to INSAT/GSAT system, instead, lease agreements with the foreign satellite providers was renewed for further periods.

2.52. DoS stated that in March 2014, DTH service providers could not be brought back to INSAT/GSAT due to insufficient available capacity to meet DTH requirements, as capacity on GSAT-8 was allocated to meet national and government services. The reply needs to be viewed in the light of the fact that GSAT-8 was initially planned to cater to requirements of DTH service providers (2005-07). But due to delays in its launch DTH service providers were accommodated on foreign satellites. Once capacity was allocated on foreign satellites, it was difficult to bring the service providers back to INSAT system for operational reasons such as location specific nature, bulk requirement of satellite capacity and dish migration expenses and customer inconvenience.

2.53. Audit observed that DoS arranged foreign satellite capacity to Indian DTH industry as a short term measure to ensure that the service could eventually be brought back to INSAT system. As DoS could not realize its communication satellites in time, most of the DTH service providers moved to foreign satellite. These DTH service providers later did not prefer to return to INSAT system due to trust deficit. When asked about the steps were being taken by DoS to rectify the trust deficit and bringing back the DTH service providers to the INSAT system and does the DoS think that it is really possible to get back the DTH providers who have since shifted to foreign satellites DoS replied that:

"DoS has plans to bring the DTH operators back on satellites built by DoS/ISRO. DoS has protected the interest of DTH operators and they continue to be the users of INSAT system which comprises of leased as well as indigenous transponders. The business relationship between DTH operators and DoS continue to be good. DoS/ISRO is working towards enhancing the capacities for DTH services from a given slot which is essential for addressing the growth requirements of any DTH operator. With increased capacity it will be feasible to bring back the DTH operators on satellites built by DoS/ISRO".

2.54. Audit observed that DTH service is 'location specific' and any change in the position of the satellite would result in mitigation expenses to the DTH service provider besides causing inconvenience to the customers. Therefore, bringing back service

providers from foreign satellite to INSAT system would be an improbable and difficult exercise. On being asked whether the DoS had this in mind when the DTH service providers started migrating to foreign satellite systems and wanted to know if the DoS took/proposed any measures for bringing back the DTH service providers back to INSAT system DoS replied that:

"DoS is aware that the DTH operator would have difficulties to migrate their services from one satellite to another in view of the financial implications and inconvenience to the customers. Any DTH operator would be willing to move to a new location only when his capacity requirements of providing a larger number of channels cannot be met from his operating orbital location. Increasing larger number of channels by DTH service provider may have to be adopted due to:

- The additional capacity required to beam high quality HD & Ultra-HD, 3D TV channels, especially sports, music, movies etc; and
- Addition in number of regional language channels

DTH operator would have to balance the need to expand services with the difficulties involved in migration to different orbital slot. Therefore, if the required additional capacity were to be made available or committed to the DTH operator by DoS/ISRO with assured continuity in the future, it would be possible to bring back DTH operators to satellites built by DoS/ISRO. DoS/ISRO is planning to initiate discussions in the ICC, Space Commission and with the government for finding a suitable strategy, including the regulatory provisions in the country, so that in the coming years Indian satellites can meet the transponder capacity requirements of users including that of DTH services".

### CHAPTER - III ALLOCATION OF SATELLITE CAPACITY

3.1. Allocation of satellite capacity for DTH service was to be done in accordance with the provisions of the SATCOM policy. According to Article 2.5.2 of the policy, INSAT Coordination Committee (ICC) was to earmark at least a certain percentage of capacity in INSAT system for use by the non-governmental users who had been authorized by law to provide various telecommunication services including broadcasting. Article 2.5.3 of the policy stipulated that ICC was to evolve the procedures from time to time taking into account the capacity available and prevailing situation in the satellite communications market.

3.2. Article 2.6.2 of the policy further stated that once capacity was earmarked by ICC, DoS was to provide the satellite capacity following its own procedures. In case the demand exceeded available capacity, DoS was to evolve suitable transparent procedures for allocation of capacity, which could be any equitable method such as auction, good faith, negotiation or first come first served basis etc. As of 31 July 2013, five Indian satellites were identified for DTH service in India, as shown below:

| Sl. No.      | Satellite | Date of launch    | Mission life (Years) | Number of Ku Band transponders |                           | DTH service provider to whom capacity was allocated |
|--------------|-----------|-------------------|----------------------|--------------------------------|---------------------------|---|
|              |           |                   |                      | Total                          | Allocated for DTH Service |   |
| 1            | INSAT 4A  | 22 December 2005  | 12                   | 12                             | 12                        | Tata Sky  |
| 2            | INSAT 4B  | 12 January 2007   | 12                   | 7                              | 7                         | DD, Sun DTH   |
| 3            | INSAT 4CR | 2 September 2007  | 12                   | 12                             | 0                         | Not allocated                                       |
| 4            | GSAT 8    | 21 May 2011       | 12                   | 24                             | 0                         | Not allocated                                       |
| 5            | GSAT 10   | 29 September 2012 | 15                   | 12                             | 0                         | Not allocated                                       |
| <b>Total</b> |           |                   |                      | <b>67</b>                      | <b>19</b>                 |   |

i) Satellite Capacity Not Earmarked By ICC

3.3. ICC was not convened after June 2004 and was re-constituted by the Government of India only in May 2011, after lapse of nearly seven years. In the meantime, three satellites were launched, in which capacity was allocated to DTH service providers directly by DoS, which was not as per SATCOM policy.

3.4. While confirming the facts, DoS stated in December 2012 that members were informed about the transponder allotments to DTH services in the Technical Advisory Group (TAG) meetings. Audit did not find the reply acceptable as TAG was only a technical subcommittee of ICC and its mandate was not to earmark satellite capacity in INSAT system.

3.5. When asked why was the INSAT Coordination Committee (ICC), which was to earmark satellite capacity, not convened after June 2004 and reconstituted by the Government of India only in May 2011, after lapse of nearly seven years, DoS answered that since the Technical Advisory Group (TAG) of ICC was functioning till December 2008 and DoS was assigned most of activities related to communication satellites, there was no compelling need to convene the ICC meeting. However, DoS/ISRO will ensure that in future at regular intervals, the ICC is convened.

3.6. During oral evidence, the Secretary, MoI&B submitted as under:

".....the hon. Member wanted to know whether we had initiated any steps for ICC meetings. I wish to inform you that on 26th of August 2014 I had convened a meeting with the Department of Space officials. In that, we had detailed discussions regarding the representations which were made by the DTH service providers".

3.7. When asked about the last meeting of ICC held and what decisions were taken therein, the Ministry replied that the last ICC meeting (ICC-75) was held on March 23, 2015 and the minutes of the meeting are under preparation.

II) Role of Ministry of Information and Broadcasting in the Allocation of Satellite Capacity

3.8. According to the Allocation of Business Rules, 1961, the Ministry of Information and Broadcasting (MoI&B) was responsible for matters relating to broadcasting in India and DoS is responsible for all activities connected with space. DTH service being a broadcasting service comes under purview of MoI&B. MoI&B is also a member of ICC. By not convening ICC, MIB was not involved in the satellite capacity allocation decision making process.

3.9. In May 2014, MoI&B also agreed that ICC being the apex body for all matters relating to allocation of transponders, it should be mandatory that all allocations be made by DoS with the approval of ICC.

3.10. During oral evidence, the Secretary, MoI&B submitted as under:

"If I may revert back to the subject, we had already submitted our comments to the draft Report of the C&AG and the salient features have already been covered in the report but from time to time we have been receiving representations from the DTH operators regarding additional Ku/BSS plan band for DTH services, Open Sky Policy to allow hiring of foreign satellites/transponders and for the issue of short-term contract being signed by DoS with foreign satellite owners. In this regard, I have also held a meeting in my chamber on 26<sup>th</sup> August, 2014 with the representatives of Department of Space and we arrived at a solution that it is better that we have much more coordination, much greater harmony in our operations so that all the guidelines, rules and regulations which are framed by the Department of Space are in sync with what exactly the other requirements of the Ministry of I&B".

III) Satellite Capacity Allocation Procedure Not Developed by ICC and DoS

3.11. As per Audit, the procedure for allocation of satellite capacity was not framed by ICC as envisaged in Article 2.5.2 of SATCOM policy until February 2013. In the absence of an ICC approved transponder allocation policy, there was no prescribed procedure within DoS for allocation of satellite capacity for DTH service providers. Though DoS stated in March 2011 that after the announcement of SATCOM policy, generally

bandwidths were allotted on 'first come-first served' basis by maintaining a waiting list of customers, documents relating to formulation of first come first served policy, rules of precedence, operational guidelines/manual, etc., duly approved by the competent authority, were not found on record. DoS stated that evolving suitable transparent procedure for allocation required under Article 2.6.2 arises only when demand exceeds available capacity. However, during the period from 2004 to 2011 when the satellite capacity was allocated to DTH service providers, the demand for the satellite capacity exceeded supply in all the years. The reply confirmed the fact that neither method of allotment nor procedure for allocation was framed by DoS with the approval of ICC.

3.12. A comparison of demand met through INSAT systems against the foreign satellite systems showed that initially during 2006 to 2009, major portion of services were being provided through Indian satellite capacity as shown below:

| Year | Number of transponders |                          |                                       |
|------|------------------------|--------------------------|---------------------------------------|
|      | Demand                 | Met through INSAT system | Met through foreign satellite systems |
| 2004 | 24.5-30.5              | 0                        | 6.5                                   |
| 2005 | 34.5-57.5              | 0                        | 9                                     |
| 2006 | 46.5-72.5              | 12                       | 9                                     |
| 2007 | 52.5-80.5              | 17                       | 9                                     |
| 2008 | 52.5-80.5              | 29.75                    | 23.5                                  |
| 2009 | 52.5-80.5              | 29.92                    | 23                                    |
| 2010 | 52.5-80.5              | 26.67                    | 31                                    |
| 2011 | 52.5-80.5              | 25                       | 51                                    |
| 2012 | 52.5-80.5              | 23.5                     | 54                                    |
| 2013 | 52.5-80.5              | 19                       | 57                                    |

3.13. Thereafter, INSAT transponders providing DTH service reduced from 30 units in 2009 to 19 units in 2013. There was a progressive increase in dependence on foreign satellite systems from 6.5 units in 2004 to 57 units in 2013. Based on the assessment of demand in DTH sector, a demand analysis was prepared by DoS in May 2013. According to these estimates, the demand was expected to increase to over 200 units beyond the year 2013, which was planned to be met almost entirely through foreign satellite systems.



3.14. On being asked as to how could, in contravention of SATCOM policy, capacity be allocated of DTH service providers directly by DoS subsequent to launching of three satellites without the concurrence of ICC DoS stated that:

"It may be noted as per the Government's rules of business, Department of Space is the administrative Ministry with respect to satellite system where as Department of Telecommunication and Ministry of Information and Broadcasting are assigned the responsibilities pertaining to license in respective sectors. INSAT Coordination Committee (ICC) is a body to coordinate the activities among the user departments. Based on the ICC-64 (Agenda-3, June 23, 2001) and ICC-65 (Agenda-5, January 04, 2002) DoS/ISRO is authorized to make transponder allocations and keep ICC informed. ICC has been informed whenever convened".

3.15. DoS stated in March 2014 that evolving suitable transparent procedure for allocation required under Article 2.6.2 arises only when demand exceeds available capacity. DoS further stated that the rules of precedence were not relevant since the capacities were available. DoS added that approval of Space Commission was not necessary, as there was no policy making involved. The reply is not acceptable, as SATCOM policy stipulated that procedure for allocation of satellite capacity was to be evolved by ICC. Further, during the period from 2004 to 2011 when ICC was not in place, the demand for satellite capacity exceeded supply in all years. The reply also confirmed the fact that neither method of allotment nor procedure for allocation was framed by DoS and satellite capacity was committed to various DTH service providers without an ICC approved policy/procedure.

3.16. Audit were of the view that allocation of satellite capacity to DTH providers is an important decision making process under DTH service. ICC, in which the Ministry of Information and Broadcasting (MoI&B) is a member, is mandated to plan and earmark satellites capacity to users including DTH service providers. By not convening ICC, MoI&B was not involved in the satellite capacity allocation decision making process. On being asked whether the MoI&B take up the matter with DoS to convene ICC being

responsible for matter relating to broadcasting in India or mutely followed the decisions taken by the DoS:

"DoS replied that from the available records, there are no communications from Mol&B for convening the ICC meeting. DTH operators approach Mol&B for obtaining the service licenses. Mol&B after receiving applications for DTH service license from the prospective operators, communicates to DoS/ISRO for obtaining the concurrence regarding satellite segment for DTH services. During this process, Mol&B is fully aware of the space segment identification/allotment to DTH operators. Mol&B is also member of the Technical Advisory Group (TAG) of ICC".

3.17. When asked why no procedure was formulated by DoS/ICC for allocation of satellite capacity for DTH service providers, the Ministry replied that the procedure followed by DoS/ISRO is:

- (a) Receive user requests for transponders capacity;
- (b) Make all efforts to accommodate the users on satellites built by DoS/ISRO; and
- (c) When capacity is not available or inadequate on satellites built by DoS/ISRO, adopt leasing of capacity from foreign satellites.

#### **IV) Allocation of Satellite Capacity Out of Turn**

3.18. Tata Sky was fifth in the order of preference for allocation of satellite capacity. Tata Sky was granted precedence over DD and allocated capacity on INSAT-4A satellite which was launched earlier in December 2005. DD, which was first in the precedence list, was allocated capacity on INSAT-4B which was launched in January 2007.

3.19. DoS stated in March 2014 that DD was allocated capacity on a foreign satellite (NSS-6) before allocation of capacity to Tata Sky on INSAT-4A. As DD had already started their DTH service from the foreign satellite, the services were migrated to INSAT-4B after the end of their contract period. DoS however, did not state whether capacity on INSAT-4A at the prime slot of 83° east was offered to DD and turned down by the latter,

which is significant in the context that DoS granted exclusive rights over this prime slot to Tata Sky.

3.20. Addressing the Committee's concern regarding out of turn allocation of satellite capacity to Tata Sky, the Secretary, DoS, during oral evidence stated as under:

"We are trying to explain the situation with respect to allotment and with respect to priority of allotment. We will come to competitiveness. This particular composition we had given to Tata Sky for a 10 year period and that price was not revised. That was one specific comment made by the C&AG. As we said earlier, INSAT 4A and INSAT 4B were the first of this kind of satellites that we were bringing in. If you have already been operating and you have a demonstrated performance capability, then the other party which is going to take will also be comfortable. This is where the issue comes. So, our option at that point of time was, we are bringing in a new capacity. Here is an operator who is also prepared to take your services what you are providing. Unless you ensure that he is assured of up to 10 years of licencing".

3.21. When asked to specify the reasons for granting precedence to Tata Sky over Doordarshan in allocation of capacity on INSAT- 4A in spite being fifth in order of preference for allocation of satellite capacity, the Ministry stated that during the nascent stage of DTH service, potential DTH operators need to engage in technical discussions with satellite operator in order to firm up ground system and service offerings. DoS/ISRO was engaged in discussions with all the three early starters (Tata Sky, Doordarshan and Dish TV) and firmed up satellite capacities as follows:

- (a) Doordarshan started the services from leased capacity on NSS-6 located at 95°E, for a period of 3 years from June 2004;
- (b) Dish TV started their testing through INSAT-3A and subsequently moved to leased capacity on NSS-6 located at 95°E from June 2004; and
- (c) Tata Sky started their service in INSAT-4A after its launch in December 2005.

It may be noted that prior to the starting of DTH service by Tata Sky, Doordarshan and Dish TV had already started their services through leased capacity for a stipulated

lease period using NSS-6. When Tata Sky were allotted the transponder capacity, all the requests at that time were addressed. It is evident from the above that there is no precedence or preference to Tata Sky over Doordarshan and Dish TV. It may also be noted that at the end of the stipulated lease period of 3 years, Doordarshan moved their service to INSAT-4B, whereas Dish TV continued on NSS-6 as they required larger capacity. DoS/ISRO offered INSAT-4A/INSAT-4B satellite capacities to Doordarshan for starting their DTH services. However, Doordarshan desired to start their service in NSS-6 for an initial period of 3 years and subsequently moved to INSAT-4B. DoS/ISRO agreed to Doordarshan's plan and accordingly accommodated their request. With regard to Sun DTH, the fourth operator, the initial agreement was entered into in February 2005, for transponder capacity on INSAT-4C scheduled for launch in June 2006. As the launch of INSAT-4C failed, based on their concurrence M/s Sun DTH were accommodated on INSAT-4B to start their service in March 2007. With regard to Reliance Big TV, the fifth operator, the initial agreement was entered into in June 2005, for a capacity on INSAT-4G/GSAT-8. Due to delay in launch of INSAT-4G/GSAT-8, M/s Reliance was offered the transponder capacity on INSAT-4CR during September 2006, which was refused by the operator. Subsequently with their concurrence, initial allocation of transponders on MEASAT-3 was offered in June 2009. Based on the above events, it may be noted that all the allotments made to DTH operators, especially among Doordarshan, Dish TV, Tata Sky, Sun DTH and Reliance Big TV are in order. Therefore, Tata Sky was not given precedence over Doordarshan.

**V) Grant of Exclusive Rights Over Prime Orbital Slots**

3.22. As per Audit, DoS granted exclusive first right of refusal to Tata Sky for using Ku band transponders at 83 degree east. This had resulted in a very advantageous position for Tata Sky as any Ku band transponders launched to this orbital slot required to be first

offered to Tata Sky and on its refusal only could be allocated to others. With the result, the Ku band transponders of GSAT-10 satellite launched at this spot was not allocated by DoS fearing litigation from Tata Sky. Consequently 12 Ku band transponders capable of generating revenue of ₹ 60 crore a year is idling from September 2012 onwards.

3.23. DoS stated in December 2012 that the satellite capacity was allocated to Tata Sky to improve acceptability of INSAT/GSAT system without compromising government interest. DoS added that in March 2014 the first right of refusal was given as a technical requirement as further expansion of capacity for DTH service was possible only at the same orbital location. Audit had stated that DoS did not give exclusive right of first refusal to any other DTH service provider, indicating that DoS gave a preferential treatment to Tata Sky over other DTH service providers.

## CHAPTER - IV

### LEASING OF SATELLITE CAPACITY

4.1. According to Article 2.6.5 of Norms Guidelines and Procedure (NGP) of Satellite Communication (SATCOM) Policy, the use of Indian National Satellite System (INSAT) capacity by non-Government users was to be based on a formal lease agreement signed between DoS/INSAT and the party, which would spell out the technical, financial, contractual and management terms and conditions. However, approval and control mechanism to ensure that the various terms and conditions of the agreement were determined after examining the technical, financial and legal implications of the contract as well as to fix responsibility and accountability for management of the contract was not put in place in respect of DTH transponder lease agreements.

4.2. Audit also observed that there was no prescribed procedure for:

- Approval of the appropriate authority from the financial angle (Member Finance of Space Commission) so that financial interests and financial risks involved were sufficiently covered in the lease agreement;
- Approval from Ministry of Law from the legal angle;
- Duly documented meeting of Technical committee and Commercial negotiation Committee at the appropriate level for negotiation of terms and conditions with the service providers; and
- Stipulation of the officials responsible for management of the contract.

DoS stated in March 2014 that various methods for leasing transponders to commercial users in INSAT/GSAT system had since been adopted and streamlined.

4.3. Audit observed that in respect of the transponder lease agreements entered into by DoS with DTH providers for allocation of satellite capacity on INSAT systems, whereas DoS provided all technical support, invoicing and collection of payments was done by Antrix. For this, Antrix charged commission ranging from 15 per cent to 40 per cent from DoS. In respect of the back to back contracts entered into by Antrix with the

DTH service providers for foreign satellite capacity, Antrix charged commission of 7.5 per cent from the DTH service providers. Though DoS offered substantial technical support in the allocation and leasing of satellite capacity to DTH service providers, no remuneration was claimed by DoS. On the contrary, the effective realisation of revenue by DoS through leasing of INSAT/GSAT capacity was also reduced due to considerable percentage being paid as commission to Antrix. While agreeing that it provided technical support to Antrix, DoS stated that in March 2014 back end work related to end user and Antrix was significant and the current mechanism was necessary to establish INSAT/GSAT system as a good commercial venture. The reply may be viewed in the context that in spite of rendering complete technical support for the allocation of satellite capacity in back to back agreements, DoS did not claim any compensation from Antrix.

**l) Loss Due to Non Revision of Transponder Charges**

4.4. According to the audit, the period of lease committed in the DTH transponder lease agreements between DoS and the DTH service providers for satellite capacity from INSAT system ranged from five to ten years. Transponder lease agreements entered by DoS did not include provision for revision of prices. Though DoS subsequently decided in April 2012 to raise its prices by 15 per cent ICC did not finalise the prices, due to which the revision was not carried out. In contrast, transponder lease agreements with foreign satellite operators were valid for one to six years only. Consequently, prices of transponders leased from foreign satellite systems were increased by 5 to 33 per cent over a period of one to six years whereas DTH service providers availing INSAT transponder capacity paid the same charges for six to ten years. The poor marketing strategy of DoS to continue with the same prices, when foreign satellite providers regularly revised their prices resulted in loss of transponder charges and provided an

extra advantage to the service providers who were allocated INSAT capacity. Pricing differential was estimated at ₹ 36.17 crore to the disadvantage of DoS.

4.5. Audit observed that lease period in transponder lease agreements of INSAT Ku band satellite capacity for DTH service ranged from five to ten years without provision for revision of prices. Though, DoS subsequently decided to raise its prices by 15 per cent the revision was not carried out. In contrast, the transponder lease agreements with foreign satellite operators were valid for one to six years only. Prices of transponders leased from foreign satellite system were increased by 5 to 33 per cent over a period of one to six years whereas DTH service providers availing INSAT transponder capacity paid same charges for over six years to ten years. Thus, the transponder lease agreements did not safeguard financial interests of the government. When asked to clarify as to why no price revision clause was included in the lease agreement thereby adversely affecting the financial interest, DoS, in their written submission to the Committee, replied that it is appropriate to note that DTH services being provided in country was a new service with lots of uncertainties about its growth and sustainability. In view of this, it was appropriate to enter into a long term agreement with a fixed price. However, this fixed price has been arrived at after accounting for cost of realization and internal rate of return which ensured the financial interest of the Government. The stable and long term pricing has improved the acceptability satellites built by DoS/ISRO and made it competitive even as it has remained comparable to international prices.

4.6. While noting that Antrix Corporation charged a commission of 15%-14% for leasing of satellite capacity it was asked whether DoS sought any compensation from the lessees DoS replied that as the Contract Manager, Antrix Corporation Ltd, monitors and manages agreements; raises invoices on a periodical basis; maintains accounts for receipts; recovers dues on behalf of DoS through follow up and personal visits of officials;



undertakes commercial/service tax/income tax assessments by hiring professionals, makes tax payments etc. Upon payment by the INSAT/GSAT transponder users, the amount towards space segment charges is transferred to DoS. DoS, then, reimburses the contract management fees at 15% to Antrix Corporation Limited. Thus, DoS gets 85% of the transponders charges that are allotted to users.

4.7. The period of lease committed in the DTH transponders lease agreements between DoS and DTH service providers from INSAT system ranged from 5 to 10 years while the transponder lease agreements with foreign satellite operators were valid for 1 to 6 years only. When asked to specify the reasons for longer term contracts which adversely affected the financial interests DoS answered that the DoS-User agreements signed for DTH operations services using indigenous satellite capacity are for a longer term of 5-10 years. This is primarily towards providing an assurance and commitment to the Indian DTH operators about the continued availability of space segment capacity at the same orbital slot. Considering the large investments and risks incurred by a DTH operator in terms of establishing teleports, Hubs (earth station), technology, redundancy, set-top boxes, etc., the assurance on the availability of satellite space segment capacity for a longer duration would go a long way in computing their cash flows and evolving firm business plans. With respect to leasing of capacity on foreign satellites, the agreements are signed for a shorter period since it is always intended, in tune with the SATCOM policy, to bring services back on the satellites built by DoS/ISRO.

4.8. During oral evidence, the Secretary, DoS, submitted as under:

"Sir, I will just try to make one small point here. See, when you are trying to negotiate a contract with a particular operator, depending on that particular operator's queries and demands, there will always be differences. Depending on my own technical capability, there are differences and one is not shown to the other. Whatever specific contract features were asked by the parties, which was acceptable was agreed to".

4.9. Further, during oral evidence, on being asked about the progress made after the last recommendation about incorporation of price revision clause and was there any progress towards that, the Secretary, DoS submitted as under:

"Currently with respect to the price revision, we had a mechanism which is being established. We are looking into that and we will come out with that because the draft Cabinet Note also addresses all this – what is the category of the user and for each user what type of price should be done. So, this is being addressed. We will come back with that".

4.10. When enquired on as to why was the decision of DoS to raise prices by 15 percent not carried out, DoS replied that since the contract is firmed-up for fixed period, the price revision is not feasible.

ii) Special Terms and Conditions of Transponder Lease Agreement with Tata Sky

4.11. Audit observed that Transponder lease agreement entered with Tata Sky extended benefits to Tata Sky which were not offered to any of the other DTH service providers, such as open ended commitment for satellite capacity, greater credits in the case of interruption in service, provision for inspection of customer's earth station by DoS, facility to assign its rights or obligations to its affiliates. Chairman of Tata group was one of the non-functional directors in the board of directors of Antrix. Although there might be no direct impact on the decision making process within Antrix, allocation of Ku band transponders of INSAT-4A on exclusive basis to Tata Sky does raise the question of conflict of interest.

4.12. While admitting the above, DoS stated in December 2012 that the contract with Tata Sky was entered during initial period of marketing INSAT/GSAT system with a vision to bring private users towards INSAT/GSAT system. DoS added that in March 2014 such clauses were accepted based on customer specific request as a part of negotiations and were intended to provide certain confidence to the users as well as flexibility in contract

management. Audit further stated that substantial differences between agreement entered into with Tata Sky vis-à-vis other transponder lease agreements, especially grant of exclusive rights over the prime orbital slot, were also noticed by Ministry of Finance, which requested DoS in March 2013 to re-negotiate the terms of agreement entered with Tata Sky. However, as of June 2014, this was yet to be done.

4.13. On being asked whether the transponder lease agreement was tweaked in favour of Tata Sky giving certain benefits to the company and not to any other DTH service providers, DoS replied that the transponder lease agreement is not tweaked in favour of Tata Sky. In any contract the technical terms and conditions that get finalized depends on the issues brought to discussions by the parties. Any condition which has significant impact on the financial aspect of the contract also gets factored into, in these discussions. The lease agreement with Tata Sky is executed to make indigenous satellites built by DoS/ISRO with High power Ku band transponders, acceptable to DTH service provider. It may be noted that Tata Sky was the first private operator to put trust in indigenous satellite technologies, and agreed to pay rates for the transponders which protected the financial interest of government.

**III) Loss Due to Undercharging of Transponder Prices**

4.14. DoS under charged for the transponders of Sun DTH which resulted in a loss of ₹ 2.94 crore over the period from 15 January 2008 to 6 July 2010. DoS also reduced the price of these transponders with effect from January 2010 which resulted in loss of ₹ 46.92 lakh to DoS.

4.15. Audit further observed that without citing any reason, DoS also reduced the price of these transponders with effect from January 2010 to ₹ 4.70 crore per transponder, which resulted in loss of ₹ 46.92 lakh to DoS. DoS stated in March 2014 that the Standing Committee was empowered to take the decision.

4.16. During oral evidence, when asked whether Sun DTH was provided bonus time first and other DTH operators were provided subsequently, the Secretary, DoS submitted as under:

"No, Sir. I would just explain it. What happens is that when one is getting into the service, when the satellite is in place and also the operator is coming in, there is a minimum time by which he is able to test it out and then prove; and also he has to get the licence".

4.17. Further, he submitted as under:

"In all cases, there is a certain amount of free time, which is provided to everybody. In this case, there was an extra three months, which came because of the licence getting issue, the time by which they could get the licence. This was an extra time. Otherwise, everybody is provided with certain time where they can test it out, test the signals. That is nominal, which everybody gets. But in this particular case, there was an extra period, which came in because of the difficulties in completing the licensing process with the Departments. It was causing the problem. Finally, they had gone for litigation".

4.18. When asked about any delay occurred in the case of Sun DTH to get the licence and who issues DTH licences during oral evidence, the Secretary, DoS, submitted as under:

"This delay was from Network Operation Control Centre (NOCC) and not MoI&B. There are three segments. Initially, the MoI&B comes when the request is made. They say, okay. The final operator is the DoT".

4.19. On being asked to specifically clarify that an agreement with Sun DTH for leasing of 6.25 transponder units in INSAT-4B satellite at the rate of ₹ 4.75 crore per transponder was actually in effect charged for only six transponders resulting in a loss of ₹ 46.92 lakh. DoS replied that the reason for charging for 6 transponders as against 6.25 transponders is taken by DoS/ISRO by following structured discussions with due approvals. Sun Direct TV was initially offered 9x36 MHz transponders on INSAT-4C. With the loss of INSAT-4C during launch, Sun Direct had to postpone its plans to commence DTH business, although all the ground equipments were ready, and huge investment was

already made with no return. INSAT 4B carried 9x36 MHz and 3x27 MHz of Ku band transponders. M/s DD Direct Plus of Doordarshan had been provided with 5x36 MHz transponders for its DTH operations. Rather than await the launch of the replacement satellite, INSAT-4CR, Sun Direct opted for Ku bandwidth on INSAT-4B at 93.5 degrees east, accepting the residual capacity of (4x36 + 3x27) MHz transponders on INSAT-4B. The standard bandwidth configuration preferred by a DTH operator is either 36 or 54 MHz bandwidth. As the DTH operator operates on a Multi-Channel per carrier (MCPC) mode, working with lesser bandwidth (27 MHz transponder) poses several constraints in terms of reduction in number of channels that could be multiplexed in a transponder, additional investment in the uplink equipment chain etc. Also, unlike any DTH operator seeking large chunks in space segment capacity, Sun Direct was ready to operate with just 4x36 + 3x27 MHz residual capacity on INSAT-4B. Considering all these factors, it was decided to treat the capacity as 6 full transponders (equivalent of 36 MHz), with due approvals.

#### **IV) Allocation of Bonus Time**

4.20. DoS allowed bonus free period of 1.5 months after the permitted three months time to Sun DTH which resulted in unintended benefit of ₹ 3.56 crore to Sun DTH. DoS stated in March 2014 that the decision was taken by the Standing Committee, which was empowered to take the decision. Audit did not find the reply of DoS acceptable since the Standing Committee was only mandated to establish the minimum price for each type of transponders and was not mandated to extend bonus free time for usage of transponders.

4.21. When enquired about as to what were the reasons for allowing bonus free access to satellite capacity for 1.5 months after the permitted three months time to Sun DTH resulting in unintended benefit of ₹ 3.56 crore to Sun DTH, DoS answered that typically, a

service provider can access a satellite only after obtaining approvals from MoI&B, Wireless Planning & Coordination (WPC), Network Operation Control Centre (NOCC) etc. To facilitate the service provider to carry out initial trials and testing with the satellite space segment, free period is given to all operators. It is the standard industry practice to provide a free period to a DTH service provider in the initial phase of business. Such free period is utilized by the operator to get hands-on feel of operations on the satellite, resolve technical problems with respect to antenna, obtain optimal performance output from the antenna, to conduct trial uplink tests and access to the satellite, fine tune and optimize performance, etc. In this specific instance, Sun DTH was unable to start the testing due to the non-receipt of regulatory clearance from NOCC/DoT for uplink. DoS pursued with Sun DTH for the payment as per the contract at the end of stipulated free period. However, since, Sun DTH had not received the NOCC/DoT clearance in time and are unable to use the transponders, they disputed the extent of free period from this start date. Simultaneously, it also initiated arbitration proceedings and brought out an injunction from Madras High Court restraining DoS from taking any corrective steps to enforce the demand for payment. In response to this, DoS attempted to resolve this issue through a high level committee which recommended extending the free period by 1.5 months to this user, in view of the fact that delay had happened because of non-issue of NOCC/DoT clearances.

**V) Revenue of ₹ 5.90 crore Not Collected Due To Failure To Sign MoU**

4.22. Article 2.6.5 of NGP of SATCOM Policy stipulated that for leasing of capacity, DoS was to enter into transponder lease agreements with the DTH service providers. DoS, however, did not enter into such an agreement with DD instead, signed MoU in March 2004 with Prasar Bharti for leasing five transponders of INSAT-4B to DD for DTH

service. Although the MoU stated that DD would be charged for the Ku band transponders at the prevailing rates, the rates to be charged were not indicated.

4.23. Based on the request of Prasar Bharti, though DoS allocated one additional transponder to Prasar Bharti it did not enter into a firm agreement/MoU. Prasar Bharti later informed that the additional transponder was not put to use since MoU was not signed. As a result, revenue of ₹ 5.90 crore towards lease charges was not collected by DoS.

4.24. DoS replied that in March 2014 Prasar Bharti subsequently signed MoU and had agreed to pay lease charges for the additional Ku band transponder with effect from May 2012. DoS, however, remained silent on the status of the said payment.

4.25. During oral evidence, the CEO of Prasar Bharti apprised the Committee as under:

"I asked the Engineer-in-Chief and he says that our billing starts from the date of signing. Since there were initial glitches, we were not signing. However, I will get back and give a written report to the Committee. I am little bothered about the relaxed manner in which these things operate. I have been asking them for a white paper".

4.26. When asked that even after allocating one additional transponder to Prasar Bharti, why didn't the DoS did not enter into firm agreement/MoU with Prasar Bharati, DoS replied that it entered into an MoU with Prasar Bharati (Ref.: MOU/4B/Ku/DTH/06/2012 dated May 22, 2012) for the provision of 6x36 MHz Ku band capacity on INSAT-4B for its DTH operations. The commencement date of this MoU is the date of allotment of the transponder i.e. May 22, 2012 and is valid till March 31, 2015.

4.27. Audit noted that Prasar Bharati did not use the additional transponder as a result of non signing of MoU with DoS resulting in non collection of lease charges of ₹ 5.90 crore. When the DoS was asked to explicitly explain the logic of assigning an additional transponder without signing an agreement/MoU with Prasar Bharati DoS submitted that:

"An additional transponder (i.e. 6<sup>th</sup> Transponder) was allocated to DD/Prasar Bharati during May 2012 and charges towards this transponder is being paid on a regular basis. Till September 2014, payments for the space segment charges are being received as per the old rates. From October 1, 2014 onwards, space segment charges as per the revised rates are being received. The difference in space segment charges between revised and pre revised rates for the period from April 1, 2012 till September 30, 2014 is yet to be received".

4.28. It was sought to know whether the DoS taken any steps after the audit observation to prescribe procedure for approval of the appropriate authority from the financial angle, approval of the Ministry of Law from the legal angle, duly documented meeting to technical committee and commercial negotiation committee and stipulation of the officials responsible for management of the contract? DoS answered that an initiative was taken by DoS to standardize the terms and conditions of the Agreement in coordination with the Ministry of Law & Justice, Department of Legal Affairs. Wherever standardized terms and conditions are feasible, DoS/ISRO is proposing to follow uniform MoU. Accordingly, the terms and conditions for the provision of Space segment capacity were finalised. In accordance with the standardized terms, an Agreement with standard terms and conditions is entered into with commercial users and a Memorandum of Understanding with Government users. From April 01, 2012 onwards, the Agreement/MoU with all INSAT/GSAT satellite users of space segment capacity is in line with the vetted terms and conditions for space segment capacity. The existing practice of recording technical committee meeting deliberations and commercial negotiations are further strengthened. Antrix continues to be contract manager for all transponders lease contracts. Contracts with foreign vendors are executed by Antrix and DoS/ISRO executes the contract with end users.

#### **VI) Outstanding Dues From Back to Back Agreements**

4.29. DoS arranged foreign satellite capacity to Indian DTH service providers for short term period through Antrix as a temporary measure to ensure that the service could be



brought back to INSAT system when Indian satellite capacity was eventually available. DoS entered in back to back agreements for Dish TV, Sun DTH, Airtel, Reliance and Videocon. The transponder lease charges to the tune of ₹ 62.55 crore remained to be recovered from these parties.

4.30. DoS stated that in March 2014, an amount of ₹ 57.17 crore was since recovered. The balance of ₹ 5.38 crore remained outstanding. As per Audit, outstanding dues in back to back arrangement suggest that in these cases Antrix did not collect money in advance from service providers as per the conditions of the transponder lease agreements and allowed them to make payment on credit basis, thereby extending undue favour and resultant accumulation of transponder lease charges.

4.31. When asked why Antrix did not collect money in advance from service providers as per the transponder lease agreements and allowed the providers to make payment on credit basis DoS replied that all the agreements managed by Antrix stipulate payments in advance, either monthly/quarterly/half yearly/annually.

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PART - II  
OBSERVATIONS/RECOMMENDATIONS

Introduction: The Committee note that the Government approved the proposal of the Ministry of Information and Broadcasting, the nodal Ministry, to introduce Direct to Home (DTH), a satellite based broadcast service which entails distribution of multi-channel television programmes in Ku band, in India in November 2000. The Government approved an 'Open Sky' policy and allowed both Indian and foreign satellites to be used in DTH services with the condition that proposals envisaging use of Indian satellites would receive preferential treatment. The Committee further note that the Department of Space (DoS) provides national space infrastructure through satellite transponder capacity to meet the telecommunication, broadcasting and security arrangements of the country and according to the approved policy, it had to acquire and allocate necessary transponder capacity from foreign satellites for short term periods, so that the service could be brought back to INSAT system as and when Indian satellite capacity was available. Audit carried out a performance audit on management of satellite capacity for DTH service by reviewing the 'Open Sky' policy of the Government and found, during the course of audit, that, despite having sufficient funds, Department of Space (DoS) failed to realise the communication satellites against their planned target achieving only 22 per cent, which resulted in foreign satellites providing 75 percent of transponder services to Indian channels. Consequently, Indian service providers migrated to foreign satellites and luring them back to INSAT satellites is a difficult task since DTH service is location specific and any change in satellite position would result in migration expenses to the service providers as well as inconvenience to the customers. It was also found that satellite capacity allocation was plagued with certain systemic lapses. The

INSAT Coordination Committee (ICC) empowered to earmark satellite capacity, was not convened after June, 2004 till it was reconstituted in May 2011, after a lapse of nearly seven years. DoS unilaterally allocated satellite capacity without involving other concerned Ministries like Ministry of I&B. It was also observed that Tata Sky was given preferential treatment in the allocation of satellite capacity, violating stipulated policy. In the case of Sun DTH also, a case of favoritism was observed causing a loss of ₹ 46.92 lakh to the exchequer and an unintended benefit of ₹ 3.56 crore to the operator. Besides, allocation of an additional transponder to Prasar Bharti on the latter's request remained unused due to unsigned MoU between the two from May 2012 to July 2013 resulting in a loss of ₹ 5.90 crore to the Department of Space (DoS). Since the DoS could not materialise the planned/communicated satellite capacity, satellite capacity was arranged from foreign satellites and most of the DTH service providers did not return to Indian satellite system thereby putting India at a disadvantage in maintaining its own INSAT fleet. The problems were further compounded due to idling of GSAT-8 and GSAT-10 for 7 to 11 months intended for DTH service. Further, the Transponder Lease Agreements did not safeguard the financial interests of the Government. The lease period in the agreement for INSAT Ku Band satellite capacity ranged from 5 to 10 years without any provision for revision of prices. Although, the prices were raised by 14 percent it is yet to be implemented resulting in an avoidable loss of ₹ 36.17 crore to the nation. Prices of transponders leased from foreign satellite systems were increased by 5 to 33 percent over a period of 1 to 6 years whereas those availing INSAT transponder capacity paid the same charges for over 6 to 10 years. The examination of the subject by the Public Accounts Committee (2015-16) and its Sub-Committee-V dealing with 'infrastructural projects other than Railways' also

brought out various shortcomings. These and other relevant issues have been dealt with in the succeeding paragraphs.

2. Satellite Capacity not Earmarked by ICC: The Committee note that the INSAT Coordination Committee (ICC), a high level multi departmental decision making body, consisting of Secretaries of Department of Space, Department of Economic Affairs, Department of Telecommunications, Ministry of Information & Broadcasting, Department of Science & Technology and Department of Information Technology was responsible for coordinating and monitoring the implementation of space and ground segments of INSAT projects. However, the Committee note with serious concern that the ICC was not convened after June 2004 and was reconstituted after a lapse of 7 years in May 2011. The Committee observe that the DoS flouted the norms framed under the SATCOM policy by allocating transponder capacities on three satellites to DTH service providers without convening ICC meetings which was responsible for earmarking satellite capacity for non-Government users. The Committee note from the reply of the DoS that members of the ICC were informed about the above mentioned arrangement in meetings of Technical Advisory Group (TAG), a technical Sub-Committee of the ICC. The Committee opine that ICC has been mandated to earmark the satellite capacity for non-Government users and , therefore, only informing members of ICC during a sub-Committee meeting shows the callousness of the DoS towards the high level decision making authority. The Committee are of the strong view that the DoS did not follow the prescribed procedure and exceeded its sphere by taking unilateral decisions-bypassing the mechanism on issues which are beyond its expertise. The Committee exhort the DoS to regularly convene the ICC meetings which is required as per norms for leasing of transponder capacity on Indian satellites since

allocating satellite capacity is a sensitive issue having financial implication on the revenues of the Government. The Committee desire to be apprised of the reason for not convening the ICC meetings, taking unilateral decisions bypassing the system and the punitive action taken within three months of the presentation of this report.

3. Role of Mol&B in the Allocation of Satellite Capacity: The Committee highlight the fact that since DTH being a broadcasting service, it comes directly under the purview of Ministry of Information and Broadcasting (Mol&B) as it is responsible for all the matters relating to broadcasting in the country. According to the SATCOM policy, all allocations are made by DoS with the approval of the ICC. Also, being a member of the ICC, Mol&B is also involved in satellite capacity allocation. Since, the ICC was not convened, Mol&B and other members were inadvertently left out of the decision making process. The Committee are shocked to note the lackadaisical approach of the Ministry of Information & Broadcasting as it remained a mute spectator while the DoS was flouting norms by directly allocating satellite capacities and the Mol&B even did not bother to intervene for convening the ICC of which it was a member. The Committee are of the view that it is high time that the different wings of the Government of India be proactive in their approach and keeping in view the national interest, coordinate properly for taking decisions which are crucial both commercially and strategically. The Committee recommend that the Ministry as well as DoS make sincere and concerted efforts to convene the ICC meetings regularly so that all the relevant stakeholders are involved in the sound planning for allocation of transponder capacity thereby paving way for a more transparent approach which could help in re-building of trust and faith of DTH service providers in the DoS and the Ministry.

4. Satellite Capacity Allocation Procedure not developed by ICC and DoS: The Committee observe that procedure for allocation of satellite capacity was not framed by ICC as per SATCOM policy until February 2013 and during the years 2004 to 2011, the demand for satellite capacity exceeded supply in all the years. Further, INSAT transponders providing DTH service decreased from 30 units in 2009 to 19 units in 2013 and a progressive increase in dependence on foreign satellites from 6.5 units in 2004 to 57 units in 2013. The Committee also note that according to DoS' own submission, the demand was expected to increase over 200 units beyond 2013. The Committee are unable to comprehend as to how the DoS went about allocation of capacities in absence of any prescribed procedures. The Committee observe that non-framing of a sound procedure led to the filling of gap of satellite capacity by foreign satellites causing a drastic drain on Government's revenue. In view of the above, the Committee exhort that the ICC should frame procedure for satellite capacity allocation as per the SATCOM policy by and further to follow the rules in letter and spirit since demand for satellite capacity is steadily increasing over the years. The Committee desire to be apprised within three months of the action taken in this regard.

5. (i) Out of Turn Allocation of Satellite Capacity: The Committee note that while Tata Sky was fifth in order of preference of satellite capacity allocation, it was granted precedence on INSAT-4A and given exclusive rights at the prime slot of 83 degrees east in December 2005 superseding Doordarshan which was later allocated capacity on INSAT 4B launched in January 2007. The Committee further note from the submission of DoS that DD was allocated capacity on a foreign satellite before allocation of capacity to Tata Sky on INSAT 4A and DD migrated to INSAT 4B at the end of the contract period. The Committee are shocked to note that the national broadcaster was allocated capacity on a foreign satellite and then

a private broadcaster was given exclusive rights on INSAT 4A. The Committee observe that the national broadcaster being the first in precedence should have been given preference on Indian satellite being a free to air service accessed by majority of population across India and also has an obligation for broadcasting across the country, thus fulfilling Government's obligation towards the citizens of this country. The Committee note with dismay that the charges paid to a foreign satellite for usage by Doordarshan was a wasteful expenditure, more so, since Tata Sky could not be retained on INSAT 4A in addition to the revenue forgone fearing litigations by the Tata Sky, taking advantage of its first right of refusal. The Committee desire to be apprised of the reason for apparent favouritism towards Tata Sky and further desire that punitive action may be taken against all those responsible for the same.

(ii) Grant of Exclusive Rights over Prime Orbital Slots: The Committee note with much concern that Tata Sky had a very advantageous position over other DTH service providers as it had the exclusive first right of refusal for using Ku band transponders at 83 degrees east. Due to this Ku band transponders of GSAT-10 could not be allocated to any other DTH service providers and remained idle thereby causing a loss of ₹ 60 crore per year to the exchequer and wonder why Tata Sky was given preferential treatment over others. The Committee are shocked at such preferential treatment shown by the DoS for a private company and; therefore, desire that an enquiry may be conducted into the transaction, stern action may be taken against those found guilty and apprise the Committee within three months of the presentation of this report.

(iii) Special Terms and Conditions of Transponders Lease Agreement with Tata Sky: The Committee note that Tata Sky was the biggest benefactor as compared to other DTH service providers as the lease agreement it entered into with DoS

provided them with certain benefits such as open ended commitment for satellite capacity, greater credits in case of service interruption, earth station inspection and assigning rights or obligation to its affiliates. It was also observed that the Tata Group Chairman was one of the non-functional directors in the Antrix board of directors hinting towards undue benefits extended to Tata Sky and raising the question of vested interest. Further, the Ministry of Finance had requested DoS in March 2013 to re-negotiate the terms of agreement entered with Tata Sky. The Committee, therefore, direct the DoS to act upon the request of Ministry of Finance urgently and re-negotiating the contract with Tata Sky thereby building trust amongst other service providers so that an impression of impartiality, openness and healthy competition is conveyed. Also, the Committee impress upon the Ministry that it should select candidates for the position of non-functional directors amongst those who have worked for the corporations involved in space related activities and arresting the doubts of conflict of interest.

6. (i) Leasing of Satellite Capacity: The Committee note that Antrix, after aggregating the requirements of the Indian customers, was to enter into back to back agreements with foreign satellite owners. However, in contravention of Article 2.6.5 of Norms Guidelines and Procedure (NGP) of Satellite Communication (SATCOM) Policy, measures regulating the contract management procedure in respect of DTH transponder lease agreements were not put in place. The Committee also note that DoS paid commission to Antrix from 15 percent to 40 percent for invoicing and collection of payments thereby reducing its effective realization of revenue. Further, the Committee wonder that in spite of rendering complete technical support for the allocation of satellite capacity in back to back agreements, DoS did not claim any compensation from Antrix. In this regard, the



Committee desire that the DoS explain the reasons therefore and recommend that the DoS take steps to put in place effective mechanisms to ensure that interests of DoS are not compromised and the agreements are made at arm's length.

(ii) Outstanding Dues from Back to Back Agreements: The Committee note that DoS arranged foreign satellite capacity to Indian DTH service providers for short term period through Antrix as a temporary measure to ensure that the service could be brought back to INSAT system when Indian satellite capacity was eventually available. DoS entered in back to back agreements for Dish TV, Sun DTH, Airtel, Reliance and Videocon. The transponder lease charges to the tune of ₹ 62.55 crore remained to be recovered from these parties. The Committee further note that till March 2014, an amount of ₹ 57.17 crore was recovered and a balance ₹ 5.38 crore was still to be collected. The Committee observe that Antrix did not follow the conditions of the transponder lease agreements by not collecting money in advance thereby extending undue favour and resultant accumulation of transponder lease charges. The Committee desire to be informed about the action taken by the DoS to collect the outstanding amount of ₹ 5.38 crore. The Committee feel that satellite capacity allocation contributes a handsome amount of revenue to the Government treasury, and DoS' faltering in administering established rules and procedure leading to the flow of revenue is totally unacceptable. The Committee further desire that DoS ensure the compliance of all the terms of the agreements and in the instant case to see that if liquidated damages/penalties could be imposed on Antrix for non-compliance of the terms. The Committee also recommend that erring officials be identified and accountability be fixed on them by means of punitive action and also a thorough investigation be done by agencies such as CBI, DRI, ED et al to further probe the matter and bring the guilty parties to justice.

7. Loss Due to Non Revision of Transponder Charges: The Committee note that DTH transponder lease agreements had a lease period from five to ten years with no provision for revision of prices whereas lease agreements with foreign satellites ranged from one to six years with provision for price revision from five to thirty three percent. The lack of such basic provisions resulted in revenue foregone to the tune of ₹ 36.17 crore. The Committee are displeased with such poor terms of agreements where even a simple provision for price revision at regular intervals was not included. The Committee desire that such agreements be reviewed and reframed to include sound/prudent financial terms in the interest of the exchequer. The Committee exhort the DoS to fine tune their marketing strategies to attract and retain service providers as well as to bring back those DTH Service providers using foreign satellites back to INSAT/GSAT systems. The Committee impress upon the Ministry that the service providers be charged at the competitive rates and preferably the lease term be also uniform for everyone ensuring level playing field across the DTH sector thereby leading to more transparency and healthy competition. The Committee further desire that the DoS set up an inquiry to look into the lease agreements with various parties and take stringent action against those responsible for agreeing to terms that were against the interests of the exchequer and apprise the Committee of the action taken within three months.

8. (i) Loss Due to Undercharging of Transponders Prices: The Committee take serious note of the DoS undercharging of transponders of Sun DTH resulting in a loss of ₹ 2.94 crore from January 2008 to July, 2010. The DoS first charged Sun DTH only for 6 transponders where as 6.25 transponders were leased to them. Subsequently, the transponder prices were reduced to ₹ 4.70 crore per

transponder resulting in a loss of ₹ 46.92 lakh. The Committee also note from the reply of DoS that Standing Committee of DoS was empowered for taking such decision but are of the firm opinion that reducing prices arbitrarily raises suspicion of favouritism and hurts the interest of the exchequer. The Committee further feel that just to retain service providers on INSAT, the DoS went about distributing goodies to private players. The Committee desire the Secretary, DoS to revisit the files relating to all the transactions, apprise the Committee of the reasons for giving such undue benefits to a private service provider and the penal action taken against the guilty officials to prevent such capricious decisions in future.

(ii) Allocation of Bonus Time: The Committee note that DoS had allowed bonus free period of 1.5 months to Sun DTH which resulted in a benefit of ₹ 3.56 crore to Sun DTH. The Committee find the reply of the DoS untenable that Standing Committee of the DoS had taken such a decision as Sun DTH could not get regulatory clearances from Network Operating Control Centre (NOCC)/DoT for uplink in first three months. The Committee further note that DoS' demand for payment for the bonus free time earlier ended in Sun DTH, initiating arbitration proceedings and bringing out an injunction from the Hon'ble Madras High Court. The Committee are of the measured view that the Government collectively is responsible for such a situation wherein DoS had to bear costs to save the commercial interests of the service providers for retaining them. The Committee, therefore, recommend that the Government of India should streamline all the necessary procedures relating to satellite capacity allocation, especially the clearances and approvals from the concerned Ministries in a time bound manner. The Committee feel that exemplary disciplinary action be taken against the then officials who did not give approvals in stipulated periods.

9. Revenue of ₹ 5.90 crore not collected due to failure to sign MoU: The Committee are amazed to note that as per the prevalent Satellite Communication (SATCOM) Policy, no agreement was signed by the DoS with Doordarshan instead an MoU was signed with Prasar Bharti with the rider that Doordarshan would be charged for the 5 Ku band transponders of INSAT-4B for providing DTH service. However, chargeable rates were not indicated and although one additional transponder was allocated to Prasar Bharti on request, it remained unutilized for want of non signing of MoU thus leading to non collection of revenue to the tune of ₹ 5.90 crore. Subsequently an MoU was signed and lease charges were effective from May 2012 but DoS was silent on actual payment status. The Committee are surprised at the approach of DoS as it has shown poor management skills. Even basic requirements have been left incomplete and both DoS and Prasar Bharati have shown lethargic attitudes. Such type of casual attitude maligns the image of Government organizations. The Committee would like to be apprised of the adjustments made, if any, for the time period of the MoU from May 2012 to March 2015 in light of revision in the charges etc. The Committee further desire the Ministry to inform them about whether the charges have been implemented and are being collected and the exact machinations which prevented Prasar Bharti from signing an MoU with DoS thereby resulting in the delay in accrual of revenue.

10. Committed Planning of Satellite: The Committee observe that DoS could not satisfactorily fulfill the competing needs of critical, strategic and commercial sectors, which led to a forced migration of commercial DTH users like Sun DTH, Videocon, Airtel and Reliance to foreign satellite systems. These DTH service providers later did not prefer to return to INSAT system due to trust deficit that was created. The Committee note that DoS committed 52.5 to 80.5 Ku band

transponders to seven DTH service providers by signing lease agreements with them, but could not provide satellite capacity on domestic satellites as planned due to non-realization of its planned communication satellites. The Committee observe that launch of only three satellites with 48 Ku band transponders, i.e., only 22 per cent of the target, coupled with non availability of indigenous launch vehicle resulted in forced migration of DTH service providers to foreign satellites. Further, when satellite capacity was eventually available in GSAT-8, it was not earmarked and remained idle and was finally allocated to non-DTH use. DoS was not even able to maintain the satellite capacity already being used for DTH service due to technical problems and used these capacities to substitute satellites being de-commissioned. During 2006 to 2009 major portion of services were being provided through indigenous satellite capacity. However, INSAT transponders providing DTH services fell from 30 units to 19 units in 2013. A progressive increase in dependence on foreign satellites from 6.5 units in 2004 to 57 units in 2013 was also observed. The Committee further note that none of the 12 Ku Band transponders on GSAT-10 was allocated to any service providers by DoS and thus remained idle. According to Audit, DoS did not allocate capacity on GSAT-10 to any other service provider fearing litigation from Tata Sky since it was given the first right of refusal on INSAT-4A thereby idling its entire 12 Ku band transponders. The DoS in its reply stated that it was able to plan and realize satellites as envisaged during the 10<sup>th</sup> Five Year Plan (FYP) but due to technical constraints, all missions could not be realized in the 11<sup>th</sup> FYP. Highlighting the estimate prepared by DoS, the Committee observe that over 200 units beyond the year 2013 would be providing DTH service through foreign satellites and only 10 percent would be provided by Indian satellites implying that DTH service providers were using 57 Ku band transponders of 5 foreign satellites against 19 transponders of 3 Indian satellites

revealing that 75% of foreign satellite utilization thereby providing steadily increasing business for foreign satellite owners. This was a consequence of the utter failure of DoS in creating planned/committed satellite capacities in time, inherent issues in migration, DTH service providers did not prefer to return to Indian satellites and stayed back on foreign satellites. The Committee are of the considered view that since orbital spectrum is a vital natural resource for revenue generation, the Ministry may re-look into the allocation of satellite capacity which has been a letdown in terms of providing transponders to the DTH service providers. The Committee while acknowledging the fact as submitted by the DoS that it has to provide satellite transponder capacity to meet telecommunication, broadcasting and security requirements of the country exhort the DoS to first focus on the production of the satellites and launch vehicles so that these can be made available in sync with the country's needs. The Committee feel that although indigenous production of satellites and launch vehicles is a very complex process and need lot of acumen and scientific research but keeping in view in fact that our country is into satellite production and its launch since 1972, the spectacular work done by our scientists since then leaves no question in one's mind about their capabilities. However, much is desired presently from the DoS in terms of committed and timely creation of satellite capacity so as to prevent migration of more and more DTH service providers to foreign satellites. The Committee desire that the Ministry should create a transparent Policy for allocation of satellite capacity for the present DTH Service as well as future satellite capacity allocations.

11. Conclusion: The Committee observe that failure of the DoS in timely planning, launching and realization of satellite capacity commensurate with the demand and requirement of the service providers as well as to the national and

strategic applications led to a great loss to the national exchequers. It enabled the foreign satellite providers to attract and capitalize the ever increasing demand from the Indian Service providers and even leading to migration of the existing service providers from the INSAT system. The situation is so worse that even the future requirement of transponders for DTH service was also planned to be met from foreign satellites. The Committee are dismayed to note that the trend of migration of most of DTH service providers to foreign satellites and their unwillingness to return to INSAT shows trust deficit. The Committee observe that the crowding of foreign satellites over Indian slot and the ever increasing demand for orbital slots would affect the working of INSAT and would also lead to non-availability of the strategically important slots for the country. The Committee, therefore, exhort that the DoS and ICC should formulate a transparent and foolproof policy as well as guidelines for creation of Ku band satellite capacity and equitable as well as judicious allocation of satellite capacity for DTH services in the country. Also, the Committee are of the measured view that scientists and other technocrats involved in planning, designing, manufacturing and launching of satellites are inept in the requisite financial aspects especially economics and marketing and feel that Antrix Corporation Limited specially created for marketing satellites are not upto their job and desire that the DoS may seek professional help i.e. other Government Departments/Organizations having specialized competence in the relevant area and further to overcome this bottleneck, the DoS may create a specialized marketing wing with professionals having the required qualifications and expertise for such a specialized job of sensitive nature. The Committee desire that the Government should introduce single window clearance of licence and other approvals for the satellite capacity allocation. The Committee recommend

that the DoS should incorporate adequate price revision clauses in the transponder lease agreements at par with that of international rates.

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NEW DELHI;  
1<sup>st</sup> April, 2015  
12 Chaitra, 1938 (Saka)

PROF. K. V. THOMAS,  
Chairperson,  
Public Accounts Committee