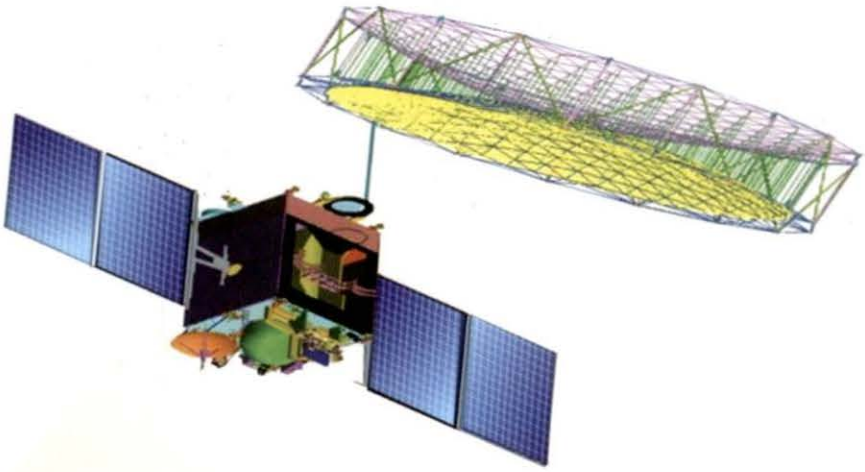
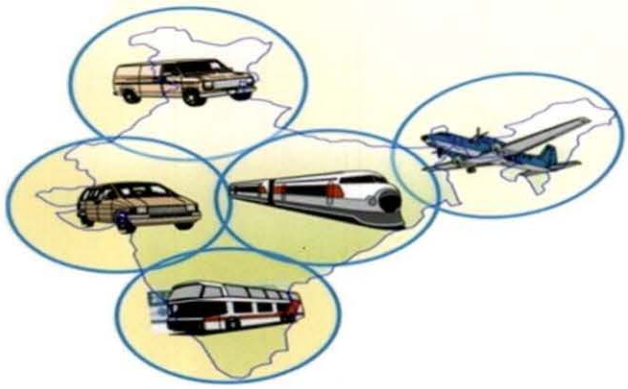
# Report of the Comptroller and Auditor General of India on hybrid satellite digital multimedia broadcasting service agreement with Devas





**Union Government**
**Department of Space**
**Report No. 4 of the year 2012-13**

# Contents

# PREFACE

*This Report of the Comptroller and Auditor General of India for the period ended March 2012 has been prepared for submission to the President under Article 151 of the Constitution.*

*The Report contains the results of examination of the 'hybrid satellite digital multimedia broadcasting service agreement with Devas' entered into by M/s Antrix Corporation Limited on behalf of the Department of Space and M/s Devas Multimedia Limited. The audit was conducted between July 2010 and June 2011.*

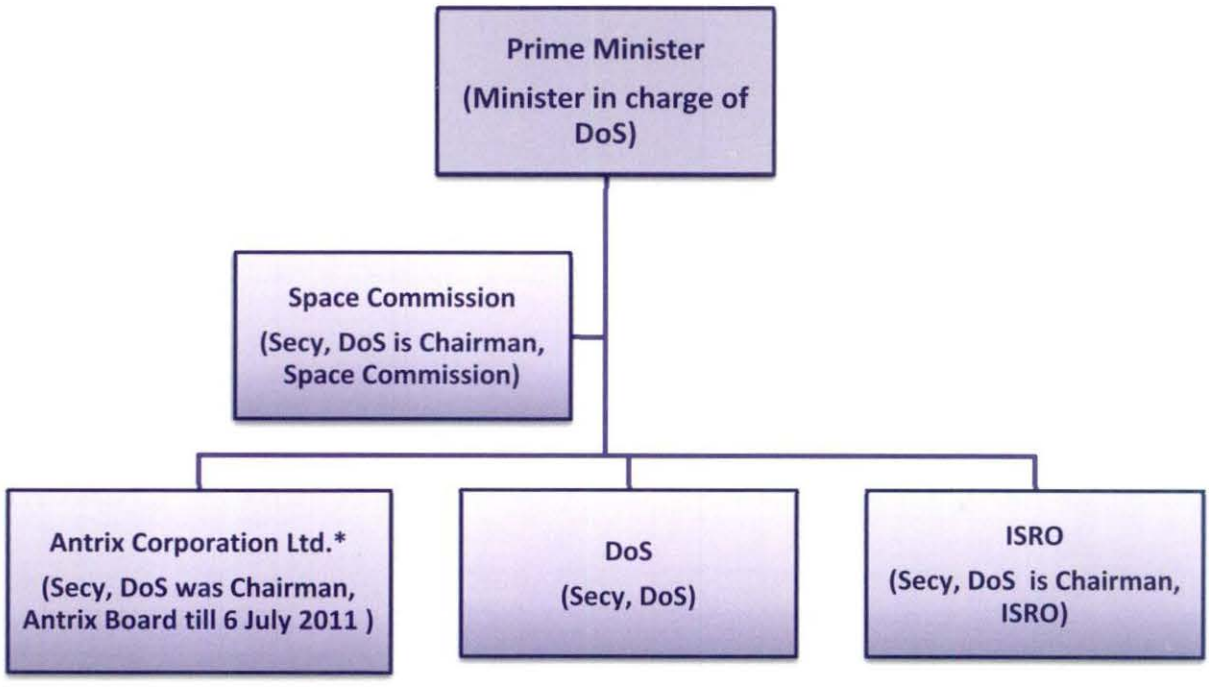
# Chapter 1 Introduction

## 1.1 Role of Department of Space

The Department of Space (DoS) is the department responsible for administration of the Indian space programme. Under its overall management, the Indian Space Research Organisation (ISRO) executes a variety of programmes through different organisations located across the country. It develops satellites, satellite launch vehicles and associated ground systems.

Its commercial arm, Antrix Corporation Limited (ACL) provides a variety of space services not just nationally, but also to other countries. These services include remote-sensing data services, transponder lease services, launch services through operational launch vehicles (PSLV and GSLV), mission support services as well as consultancy and training services.

## 1.2 How DoS is structured



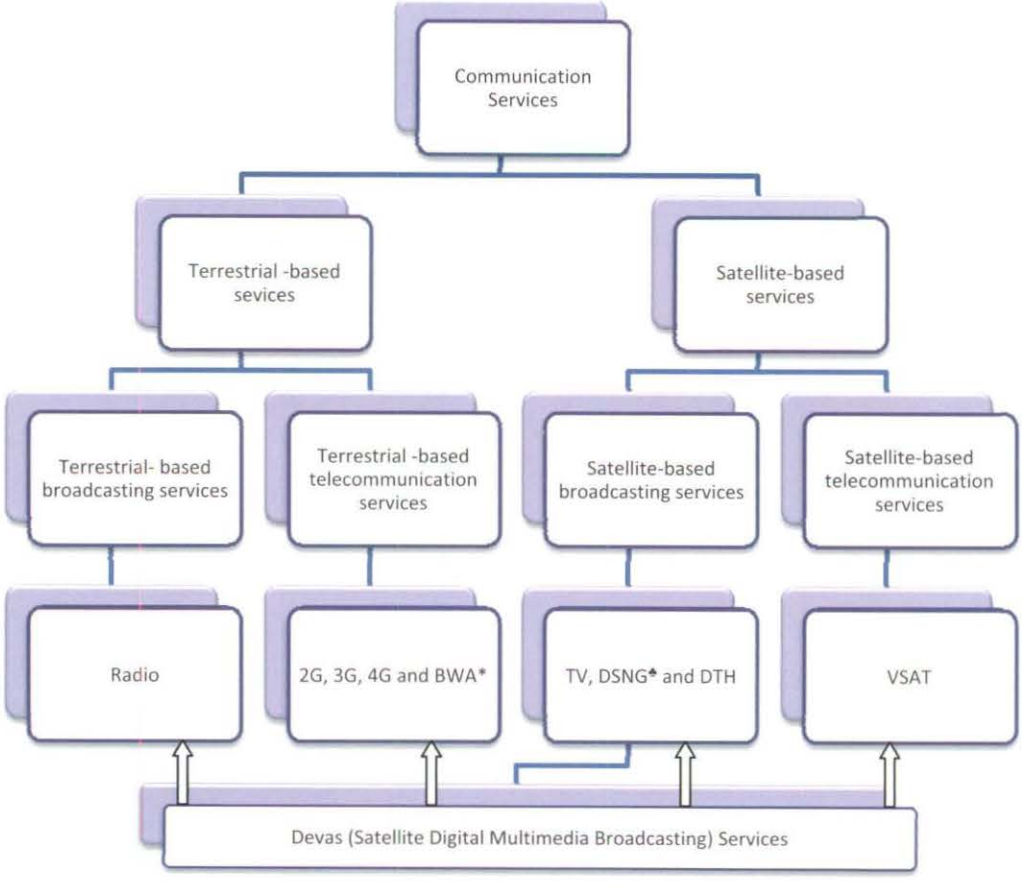

*Secretary, DoS has since vacated this position and a senior scientist has been appointed as Chairman-cum-Managing Director, ACL

The Space Commission is responsible for formulating and guiding implementation of space programmes and policies. Its members consist of the following senior functionaries:

- Chairman of Space Commission and Secretary DoS,
- Minister of State in charge of Prime Minister's Office,
- National Security Advisor,
- Cabinet Secretary,
- Finance Secretary,
- Member (Finance) of Space Commission,
- Director, ISRO Satellite Centre, and
- Principal Secretary to Prime Minister.

### 1.3 The different types of communication services

The different types of communication services are given below:




*Broadband Wireless Access
♣ Digital Satellite News Gathering

## 1.4 What are S-DMB services?

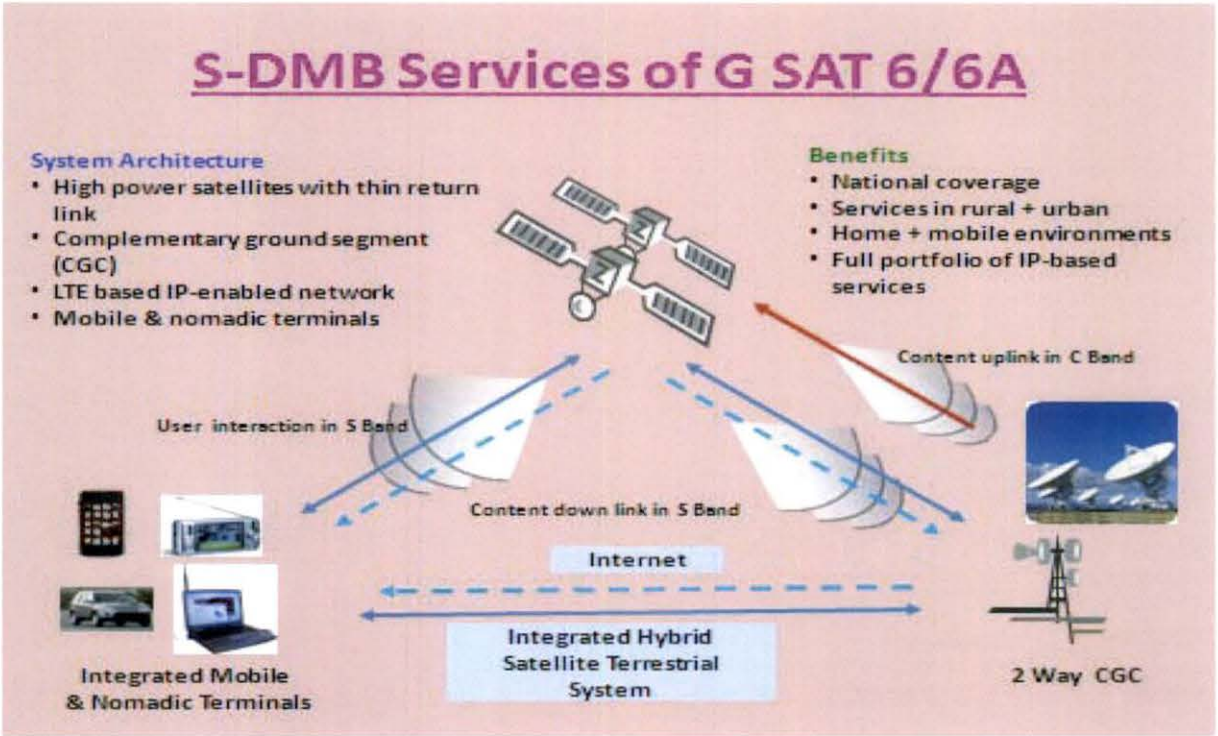
The satellite digital multimedia broadcasting service (S-DMB) is basically a digital mobile broadcasting service (mobile TV service) using satellites. Broadcasting satellite service transponders are used in satellites to provide one way S-DMB services.

S-DMB is used for a satellite-based national service for delivery of video, multimedia and information services via satellite to fixed and mobile receivers in vehicles and mobile phones across India.

## 1.5 What was Devas offering?

Antrix entered into an agreement with Devas Multimedia Limited (Devas) in January 2005 to introduce a new S-DMB service (Devas service) in the country by launching two satellites, PS1 and PS2. The Devas service was to be a hybrid system delivering internet services including multimedia, information services via landline as well as satellite and terrestrial wireless systems to fixed, portable and mobile terminals, tailored to the needs of various market segments. S-DMB technology provided two-way audio/video services and internet services, both for fixed and mobile receivers within the coverage area of the satellites.

A pictorial representation of the range of services offered by Devas proposed is depicted in Figure-1 below:



The multiple services offered by Devas were 4G services, mobile TV services, both through satellite and terrestrial routes and DTH services in the same platform. This was to be a hybrid of one-way and two-way services, both through satellite and terrestrial routes in the same platform.

## 1.6 Audit Approach

### 1.6.1 Audit objectives

- To evaluate whether policies, rules, orders, instructions issued by the competent authority were complied with in the agreement between DoS/Antrix and Devas.
- To evaluate whether the agreement between DoS/Antrix and Devas served the interests of the Government.
- To evaluate the adequacy of the control systems in DoS.

### 1.6.2 Audit scope and methodology

The audit was conducted from July 2010 to June 2011, covering the period from March 2003 to June 2011. The audit covered the execution of the agreement between Antrix (on behalf of DoS) and Devas. We studied the contractual procedures related to Devas as well as the existing clients of Antrix/DoS. The audit was conducted on the basis of records/information to the extent made available by DoS. A Statement of Facts was issued to DoS in November 2010 and their reply was received in March 2011. The revised draft report was issued to DoS in July 2011, a meeting was held with Secretary, DoS in July 2011 and their replies were received in August 2011. A meeting was held with DoS on 30 January 2012, wherein Secretary DoS furnished a list of actions taken with regard to the Antrix-Devas agreement. These replies have been appropriately included in this Report.

### 1.6.3 Organisation of audit findings

Audit reviewed the contract between Antrix and Devas and its observations are discussed in Chapters 2 to 4 of this Report.

Chapter 2 of this Report deals with violation of policies and procedures in the Antrix-Devas agreement.

Chapter 3 discusses the undue favours extended to Devas Multimedia Limited.

Chapter 4 highlights the governance and conflict of interest issues within DoS.

Chapter 5 contains the Conclusion.

## 1.7 Chronology of events

| Date | Event |
|---|---|
| **June 1972** | The Space Commission and DoS are created. |
| **1977** | The Government constitutes the INSAT Coordination Committee (ICC). |
| **June 1997** | The Union Cabinet approves the SATCOM policy framework. |
| **1997** | World Radio Communication conference (1997) makes changes in filing of orbital slots, their coordination and notification. Introduces due diligence and filing charges to avoid non-serious filings. |
| **January 2000** | The INSAT Coordination Committee prescribes practices and procedures to be followed in the allocation of satellite capacity to non-Government users. |
| **January 2000** | Government of India approves the SATCOM policy laying down norms, guidelines and procedures for implementation of the policy framework for satellite communication in India. |
| **June 2001** | DoS prescribes guidelines to be followed by DoS/ISRO in carrying out commercial projects of Antrix. |
| **2002** | Based on the International Telecommunication Union's allotment of frequencies to various countries for various applications, the Wireless Planning and Coordination Wing of Department of Telecommunications formulates a National Frequency Allocation Plan. |
| **June 2002** | DoS creates a Pricing Committee, consisting of the Additional Secretary, Director, Satellite Communication and Navigational Programme Office (SCNPO), Executive Director, Antrix, Director, Contract Management and Legal Services (CMLS) and a representative of the Member (Finance) to decide the minimum price and review the market strategy periodically in respect of various types of INSAT transponders. |
| **March 2003** | M/s Forge Advisors, USA makes a presentation to DoS/ISRO officials regarding opportunities in the global satellite market. |
| **July 2003** | A broad MOU is signed between Antrix and M/s Forge Advisors, USA for partnership and positioning Antrix in the global satellite market. |
| **April 2004** | M/s Forge Advisors make a second presentation to DoS/ ISRO officials and proposes constitution of an Indian Company to launch Devas services. |
| **May 2004** | Secretary, DoS, who is also Chairman, ISRO, constitutes the Dr. Shankara Committee to examine technical and financial feasibility, risk management, organisational aspects and time schedule of the proposal submitted by M/s Forge Advisor. |

| | |
|---|---|
| **June 2004** | 68th (last) meeting of ICC. |
| **November 2004** | Technical Advisory Group (TAG) is informed in its 122nd meeting that ISRO has plans to enter into a contract with Devas and the committee will be informed of further developments. |
| **December 2004** | The Antrix Board, in its 57th meeting, decides that instead of a joint venture, Devas services could be supported by it through leasing of capacity from an S-band satellite of ISRO. |
| **December 2004** | M/s Forge Advisors, USA promotes an Indian Company, namely, Devas Multimedia Limited. |
| **January 2005** | Dr. Shankara Committee submits its report. |
| **January 2005** | The Antrix -Devas deal is signed. |
| **May 2005** | The Space Commission approves the proposal of DoS to launch GSAT-6 by incurring expenditure from the DoS budget. |
| **August 2005** | DoS submits a proposal seeking financial sanction of the Minister-in-charge for GSAT-6 to incur expenditure from the INSAT budget. |
| **September 2005** | DoS informs Ministry of Finance that revenues are estimated to be ₹51.70 crore per annum, totalling ₹620.40 crore, during the expected 12-year life period of the GSAT-6 satellite. |
| **November 2005** | The Union Cabinet approves the proposal to undertake design, development and launch of the GSAT-6 multimedia mobile satellite system at a cost of ₹ 269 crore. |
| **February 2006** | TAG is informed in its 124th meeting that the GSAT-6 satellite is being made for a specific customer and will not be a part of the INSAT capacity. |
| **August 2007** | TRAI recommends that all spectrum for terrestrial operations in India should be auctioned. |
| **January 2008** | TRAI furnishes recommendations on mobile TV services. |
| **December 2008** | The 129th meeting of TAG is held on 26 December 2008. Under agenda item no. 7, it discusses the ground segment test requirements to validate with the Devas utilisation concept. |
| **January 2009** | A TAG sub-committee, deliberating the issues relating to the Devas experimental plan, observes that terrestrial transmission is not to be permitted in the portion of S-Band proposed to be allocated to Devas. |
| **October 2009** | DoS seeks financial approval of the Space Commission to incur expenditure of ₹147 crore from the INSAT budget for GSAT-6A development and fabrication. |

| | |
|---|---|
| **December 2009** | ISRO constitutes the Dr. Suresh Committee, a one-man committee, to examine the legal, commercial, procedural and technical aspects related to licensing of spectrum/frequency and leasing of transponders with reference to the Antrix-Devas agreement. |
| **June 2010** | Dr. Suresh Committee submits its report. |
| **June 2010** | DoS seeks the opinion of Ministry of Law and DoT to annul the Antrix-Devas agreement. |
| **July 2010** | The Space Commission approves annulment of the Antrix-Devas agreement. |
| **December 2010** | ISRO replies that based on the direction of the Space Commission to annul the Devas contract, the matter has been discussed with the Additional Solicitor General and a note submitted to the Cabinet Committee on Security (CCS) for its decision. |
| **February 2011** | CCS gives directions to annul the agreement with Devas. |
| **February 2011** | DoS directs Antrix to annul the agreement with Devas. |
| **February 2011** | Antrix sends a letter of termination to Devas. |
| **February 2011** | A High-Powered Review Committee (HPRC) is formed. |
| **March 2011** | HPRC submits its report . |
| **April 2011** | Report of HPRC is examined by the Cabinet Secretary. |
| **April 2011** | Return of up-front payment to Devas by Antrix. Devas cancels the cheque and returns it to Antrix. |
| **May 2011** | High Level Team (HLT) is formed with former CVC as Chairman. |
| **June 2011** | Senior Management Team is set up with officials from DoS/ISRO Antrix to resolve the issue with Devas. |
| **June 2011** | Devas files an arbitration demand before the International Court of Arbitration of the International Chamber of Commerce. |
| **July 2011** | Antrix issues notice of arbitration appointing retired Justice Sujata V Manohar as arbitrator. |
| **August 2011** | Department of Space furnishes its reply to Audit. |
| **August 2011** | Antrix files an arbitration petition before Hon'ble Supreme Court . |

| | |
|---|---|
| **September 2011** | HLT submits its report. |
| **December 2011** | Antrix files an arbitration application before City Civil Judge of Bangalore. |
| **January 2012** | DoS furnishes the Action Taken on the report of HPRC and HLT. |
| **February 2012** | Devas files Statement of Claim before ICC seeking either performance of the agreement by Antrix, or a compensation of USD 1.6 billion (₹ 8240 crore) plus interest at a rate to be decided by the tribunal, cost and attorney's fees etc. |

# Chapter 2 Violation of Policies and Procedures

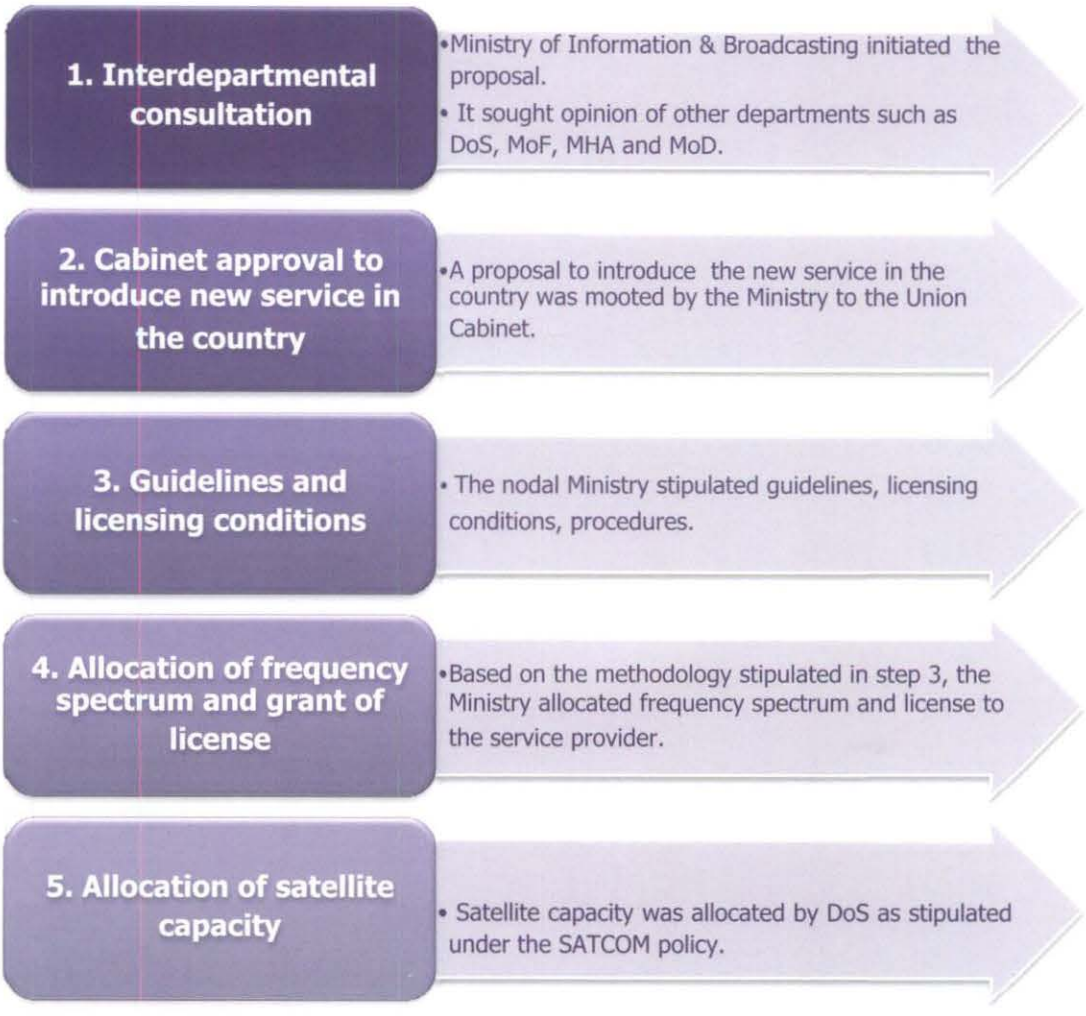
## 2.1 The procedure laid down for introduction of a new communication service was violated

The Allocation of Business Rules, 1961 detail the allocation of business of the Government of India and specify subjects to be dealt with by the Ministries/Departments. According to these Rules, the Department of Telecommunications (DoT) is responsible for policy, licensing and coordination matters relating to telecommunication services, the Ministry of Information & Broadcasting (MIB) is responsible for matters relating to broadcasting in India, the DoS is responsible for all activities connected with space applications and the Ministry of Finance is responsible for financial sanctions relating to all Ministries of the Government of India and appraisal and approval of Plan Investment/expenditure proposals of Central Ministries/Public Sector Undertakings.

As per the Transaction of Business Rules, 1961, when the subject of a case concerns more than one department, no decision is to be taken or order issued until all such departments have concurred, or, failing such concurrence, a decision thereon has been taken by or under the authority of the Cabinet.

Given the fact that a new communication service could be for telecommunications or for broadcasting and could either be satellite-based or terrestrial-based, several Ministries/Departments were involved in the process of introduction of such a service. When the new communication service of DTH was introduced in the country in 2000, it was observed that the following procedure was adopted by the Ministry of Information & Broadcasting:

**Table-1: Steps followed by the Ministry of Information and Broadcasting**




**What was the violation in the Devas case?**

The proposed Devas services which were a hybrid of telecommunication and broadcasting services, were under the policy domain of DoT and MIB and not under DoS. The role of DoS, which related to activities connected with space applications, was to come into play only after the policy and regulatory frameworks for the new services which were under the domain of DoT and MIB were in place.

In the case of Devas, we observed that:

- Interdepartmental consultations were not in place before entering into the contract for the Devas services.
- Approval from the Union Cabinet to introduce the Devas services in the country was not obtained.

- Guidelines and licensing conditions were not in place before entering into the contract for the Devas services.

**In transponder lease agreements related to DTH services, DoS allocated satellite capacity only after Step 1 to Step 4, as detailed in Table-1, were in place.**

**In the case of Devas, DoS straightaway allocated satellite capacity without following Steps 1 to 4.**

DoS stated in August 2011 that the actual procedure was as follows:

1. DoS allocates transponders, i.e. the space segment capacity to the users at prices stipulated by the department, based on the recommendations of the pricing committee set up as per the SATCOM policy.[1]

2. The users are then expected to seek operating licences from the Department of Telecommunications.

3. The users have to procure service licences from DoT or MIB based on the types of services.

4. The users have to obtain spectrum allocation from the Wireless Program Coordinator of DoT at charges that are specified by them.

5. The users also have to obtain network clearance from the Network Operations and Control Centre of DoT.

DoS further stated that even though the transponders are allocated, it is only after all these licences and clearances are obtained that the services can become operational. In the instant case, only the transponders were proposed to be allocated to Devas under the agreement. They were expected to obtain the licences and permissions from the other authorities before they could commence their services.

The reply of DoS is not acceptable since DoS outlines the procedure followed in respect of existing communication services. Devas services, however, were new communication

[1] This has been described in para 2.4.

services to be introduced for the first time in the country, for which steps 1 to 4 indicated in Table-1 were not in place.

The contention of DoS that Devas was expected to obtain all licences and permissions from the concerned authorities is to be seen in light of Article 3 Clause (c) of the Antrix-Devas agreement which spelled out that "Antrix would be responsible for obtaining all necessary Governmental and regulatory approvals relating to orbital slots and frequency clearances, and funding for the satellite for Devas services". The clause further provided that Antrix would provide 'appropriate technical assistance' to Devas on a best-effort basis for obtaining the required operating licences and regulatory approvals from various Ministries. These terms were, therefore, fairly unambiguous with reference to the hand-holding offered to Devas by Antrix.

### 2.2 Multiple services (broadcasting and telecommunications) were allowed on the same platform

The Union Cabinet, in March 2001, approved DTH guidelines which, *inter alia*, stipulated that DTH facilities which were broadcasting services, were not to be used for other modes of communication including voice, fax, data communication, internet, etc. (telecommunication services) unless specific licenses for these value-added services had been obtained from the competent authority. The context in which a particular communication service was to operate was clearly spelt out in the approval of tha Cabinet.

In this regulatory scenario, Antrix signed an agreement with Devas, authorising new services which were to be a hybrid of telecommunication and broadcasting services offering 4G services, mobile TV services, DTH services etc., on the same platform. This was done without going back to the Cabinet for approval. Such a move clearly contravened the policy approved by the Union Cabinet in 2001.

### 2.3 Approval of the INSAT Coordination Committee not taken

The INSAT Coordination Committee (ICC) is a high-level multi-departmental control mechanism instituted by the Government in 1977. It coordinates and monitors the implementation of space and ground segments of INSAT projects. ICC consists of Secretaries of six departments, viz., DoS, Department of Economic Affairs, DoT, MIB, Department of Science & Technology and Department of Information Technology. In addition, Member (Finance) of DoS is also a member of the Committee and the Programme Director of SCNPO of DoS is the Member Secretary of the Committee.

This was a Committee through which interests of these allied sectors, as listed above, were not only being articulated, but also protected. This mechanism was also in line with procedures laid down under the Transaction of Business Rules, 1961 requiring interdepartmental coordination.

The functions of ICC were as follows:-

- Coordinate and monitor the implementation of INSAT projects, both space and ground segments, to ensure efficient and timely execution.
- Coordination at the operational stage with a view to achieving maximum efficiency and utilisation.
- Planning future developments.
- Consideration of problems relating to orbit frequency coordination.
- Setting up a Technical Advisory Group (TAG) to consider and advise on all technical matters influencing more than one component of the system.

In its 61st meeting in 2000, ICC had stipulated procedures for allotment of INSAT capacity to private users. These were as follows:-

- INSAT capacity to the non-Government sector should be allotted on non-exclusive basis.
- ICC Secretariat should receive applications for transponder capacity from non-Government users.
- ICC should earmark transponders in INSAT satellites for non-Governmental users as provided under the SATCOM policy.

### Violations of procedure in Devas case

The matter of earmarking the transponders of GSAT-6 and GSAT-6A was never placed before the ICC as the Director, SCNPO did not convene any ICC meeting after June 2004.

The transponders of INSAT satellites, GSAT-6 and GSAT-6A were allocated to Devas on exclusive basis, in January 2005, not on the basis of ICC approval, but on the recommendation of the Dr. K.N. Shankara Committee[2] appointed by Chairman, Antrix/ISRO.

[2] M/s Forge Advisors, USA, an International business consultancy firm, submitted a proposal in April 2004 to DoS proposing to form one Indian Company, namely Devas Multimedia Limited for the introduction of Devas services in the country. Chairman ISRO/ Antrix constituted Dr. K.N. Shankara Committee in May 2004 to examine this proposal, its technical feasibility, risk management, financial and market aspects, time schedule and organisational aspects.

The capacity of the 20 transponders (10 each of GSAT-6 and GSAT-6A) was allocated entirely to Devas. This was in contrast with the extant practice where every client was allocated only a portion of the satellite capacity.

DoS confirmed in August 2011 that the earmarking of transponders was not placed before ICC. It further stated that the allocation of transponders on the two satellites, GSAT-6 and GSAT-6A was such that 90 *per cent* of the capacity was allocated to Devas under the agreement.

The reply of DoS that 90 *per cent* of the capacity was allocated to Devas under the agreement is not acceptable for the reason that the satellites were planned exclusively for Devas. The Space Commission's observation in its 117$^{th}$ meeting held in July 2010, that there was violation of ICC's principle of 'non-exclusiveness', confirms this point.

DoS, while furnishing information on the action taken, stated (January 2012) that ICC had been reconstituted and had held two meetings.

## 2.4 The SATCOM Policy was flouted

The policy framework for satellite communications in India (SATCOM) was approved by the Union Cabinet in June 1997 and its Norms, Guidelines and Procedures for implementation of the policy were approved by the Union Cabinet in January 2000. Some of the enabling provisions of the SATCOM policy were as under:-

- Article 2.3.1: INSAT capacity was to be made available to the commercial sector on sound business lines. i.e., on a 'for profit' basis consistent with the Government policies in the concerned user sectors.
- Article 2.3.2: All the policies regarding the INSAT system were to be determined by the ICC, keeping in view the Cabinet-approved policy framework for satellite communications in India.
- Articles 2.5.2 & 2.5.3: ICC was to earmark a certain percentage of capacity in the INSAT system for use by non-Government users and evolve procedures for allocation of transponder capacity to non-Government users, taking into account the capacity available and the prevailing situation in the satellite communication market.

- Article 2.6.2: DoS was to evolve suitable, transparent procedures for allotting transponder capacity to the non-Government users in the form of auction, good faith, negotiation, first come first served, or any other equitable method. ICC could review this arrangement at any time as required.

- Article 2.6.5: The use of INSAT capacity by non-Governmental parties 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 clauses.

- Article 2.7: DoS/ INSAT could build in capacity for a non-Governmental party, at its request, based on commercial considerations and if technically feasible, without adversely affecting the capacity for already projected, accepted and funded Government needs. The additional capacity could be for providing services in India or abroad. Such capacity was not to be deemed as part of the INSAT capacity from the Indian regulations points of view unless ICC specifically declared it to be so. However, DoS/ INSAT were to ensure that providing additional capacity to foreign agencies was in accordance with the policies of the Government of India. ICC was to be kept informed of such steps. The commercial and other terms were to be determined by DoS/ INSAT.

**Violations of procedure in Devas case**

The satellite capacity of two satellites, viz. GSAT-6 and GSAT-6A was allocated to Devas without following a sound business line and not on a 'for profit' basis.

**DoS flouted the SATCOM Policy and did not follow sound business principles while allocating transponders to a non- Government user.**

There was no evidence that DoS allocated transponders to Devas, taking into account the capacity available and the prevailing situation in the satellite communication market.

Audit found no evidence of a written-down, transparent, equitable transponder allocation policy in place prior to signing of the Antrix-Devas agreement.

Article 2.6.5 of the SATCOM policy was flouted as the transponder lease agreement was signed by Antrix instead of DoS. Antrix replied in March 2011 that Antrix Board had the Secretary, DoS as its Chairman and the Additional Secretary, DoS as one of its members. The

reply is not acceptable because DoS represented the Government while Antrix was a commercial entity.

DoS, confirmed in August 2011 that the allocation of transponders on GSAT-6 and GSAT-6A had been done without placing the matter before ICC.

## 2.5 DoS guidelines were contravened

In June 2001, DoS prescribed the procedure for executing Antrix contracts. According to this, DoS could execute Antrix contracts based on MOUs signed between DoS and Antrix. These guidelines contained detailed control procedures for estimation and expenditure of funds once the MOUs had been signed.

The customer entering into a contract with Antrix was to place funds at its disposal. DoS, on receipt of these funds from Antrix, was to credit the same under the deposit head of account (8443- Civil Deposits) to execute the work of that entity.

Thus, in respect of Antrix contracts, the expenditure was incurred from the Deposit fund. In all projects where Antrix was a signatory to contracts with customers, the costs of the projects were recovered by it through a variety of charges levied on the customers.

### Violations of procedure in Devas case

The above guidelines, which laid down the standard operating procedures, were being followed by DoS in respect of all contracts entered into by Antrix. However, an exception was made in the case of Devas.

DoS was planning to spend ₹1254.52 crore from their budget for this Antrix project.

**Funds were provided from the Government budget for the manufacture of a satellite which was to be used exclusively by a non-Government customer.**

## 2.6 Facts were concealed from the Union Cabinet

DoS submitted a detailed note to the Union Cabinet in November 2005, seeking its approval[3] for realisation of GSAT-6 (for providing multimedia mobile S Band satellite services) at an estimated cost of ₹269 crore under the INSAT programme. Secretary, DoS

[3] Being the competent authority to approve programmes costing more than ₹100 crore (revised to ₹150 crore from November 2007).

concealed and misrepresented the following facts from/to the Union Cabinet while seeking financial sanction to incur expenditure from the INSAT budget in November 2005:

- DoS did not indicate in the Cabinet note that it was planning to construct GSAT-6 satellite **as a customer-specific satellite** for Devas. Scrutiny in audit revealed that the project report of GSAT-6 prepared by the ISRO Satellite Centre in March 2005 specifically mentioned that the satellite was **being developed for Devas. However, the summary project report submitted by DoS along with the proposal to the Union Cabinet for approval did not contain the name of Devas.**

- The note submitted by Secretary, DoS to the Union Cabinet in November 2005 indicated that ISRO was already in receipt of *'several firm expressions of interest by service providers'* for utilisation of GSAT-6 satellite capacity on commercial terms. **In reality, DoS had acted upon the proposal of M/s Forge Advisors only. Hence, the statement of "several firm expressions" was incorrect.**

**Antrix had already entered into a transponder lease agreement with Devas in January 2005 for all transponders of this satellite well before Secretary, DoS submitted the note to the Union Cabinet, seeking its approval.**

The total cost of the GSAT-6 satellite, including the launch vehicle and other operational expenditure was estimated at ₹524.40 crore. The entire cost along with appropriate return on investment should have been realised from Devas instead of from the INSAT budget, since it was a customer-specific satellite.

**Customer-specific satellites are, as per extant practice, to be financed by the customer. In the case of Devas, the DoS management was planning to incur the costs from the DoS budget, that is to say, from the national exchequer.**

- Further, while processing the Cabinet Note, the Ministry of Finance sought details of expected revenue from DoS in respect of the GSAT-6 satellite before clearing the proposal to incur expenditure from the INSAT Programme. DoS replied to the Finance Ministry in September 2005 that the revenue expected by the Department by lease of transponders from GSAT-6, *"as per the existing MOUs with users so far"*, was ₹51.70 crore per annum, totalling ₹620.40 crore during the expected 12-year life period of the satellite.

**By using the words *'several firm expressions of interest by service providers' and 'existing MoUs with users'* DoS conveyed the impression to the Cabinet and the Finance Ministry respectively that it had signed MoUs with different users for use of this satellite.**

**In reality, it had signed an agreement with only one user, i.e. Devas, for all transponders of the satellite.**

- The fact that launch of the two satellites, i.e. GSAT-6 and GSAT-6A would entail an expenditure of ₹1254.52 crore, against which the realisation of revenue would be ₹1120.76 crore, was also not brought to the notice of the Union Cabinet, though it was envisaged in the agreement between Antrix and Devas.

## 2.7 DoS avoided the financial sanction of the Union Cabinet for the GSAT-6A satellite

As per the guidelines for approval of Plan projects issued in November 2007 by the Ministry of Finance, approvals for projects involving a cost of over ₹150 crore are to be obtained from the Cabinet. SCNPO submitted a detailed note in October 2009 to the Space Commission seeking its approval[4] for taking up a multimedia mobile S-Band satellite mission (GSAT-6A) at an estimated cost of ₹147 crore, under the INSAT programme. DoS justified the launch of this satellite by indicating that in view of the increase in demand for multimedia services, a follow-on satellite was proposed to augment GSAT-6 to cater to the demand in the sector.

Detailed scrutiny of the costing of the GSAT-6A satellite at ₹147 crore by Audit revealed that the proposed expenditure of GSAT-6A was not like for like when compared to that of GSAT-6 (₹269 crore), even though both the satellites had similar configurations. As such, it appears that **DoS had reduced the cost of GSAT-6A satellite to avoid obtaining the approval of the Union Cabinet.** Component -wise differences in the cost of GSAT-6 and GSAT-6A has been detailed below:

[4] The Space Commission is the competent authority to approve programmes costing less than ₹150 crore w.e.f November 2007.

## Table-2: Cost comparison of GSAT- 6 and GSAT- 6A

(₹ in crore)

| No | Description | GSAT-6 | GSAT-6A | Difference | Remarks |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5)=(3)–(4) | (6) |
| 1 | Payload | 64 | 58 | 6 | 6A was to be realised subsequently. Therefore, given inflationary trends the cost of payload of GSAT-6A should have been higher. |
| 2 | Structure | 4.5 | 4.5 | 0 | |
| 3 | Thermal | 5 | 5 | 0 | |
| 4 | Mechanism | 3.5 | 3.5 | 0 | |
| 5 | Composites | 3 | 3 | 0 | |
| 6 | TTC-BB | 2 | 2 | 0 | |
| 7 | AOCE | 5.5 | 5.5 | 0 | |
| 8 | TTC-RF | 1.5 | 1.5 | 0 | |
| 9 | Power Electronics | 2.5 | 2.5 | 0 | |
| 10 | Battery | 6 | 4 | 2 | 6A was to be realised subsequently. Therefore, given inflationary trends the cost of batteries of GSAT-6A should have been higher. |
| 11 | Solar Array | 8 | 8 | 0 | |
| 12 | Inertial Systems | 10 | 8 | 2 | 6A was to be realised subsequently. Therefore, given inflationary trends the cost of inertial systems of GSAT-6A should have been higher. |
| 13 | Sensors | 3 | 3 | 0 | |
| 14 | Propulsion | 2 | 2 | 0 | |
| 15 | AIT | 5 | 5 | 0 | |
| 16 | Mission | 3.5 | 3.5 | 0 | |
| 17 | R&QA | 2 | 2 | 0 | |
| 18 | MCF | 4 | 4 | 0 | |
| 19 | Project Management | 15 | 7 | 8 | 6A was to be realised subsequently. Therefore, given inflationary trends the cost of project management of GSAT-6A should have been higher. |
| 20 | Salary & Administration | 20 | 15 | 5 | 6A was to be realised subsequently. Therefore, given inflationary trends the cost of salary component of GSAT-6A should have been higher. |

| | | | | | |
|---|---|---|---|---|---|
| 21 | Insurance | 34 | | 34 | The cost of insurance was deleted on the plea that Devas would bear the same. It is evident that a selective approach was applied towards bearing the cost of insurance in the case of the two satellites. |
| 22 | Pre-investment for critical components of ground spare | 65 | | 65 | |
| 23 | **Total** | **269** | **147** | **122** | **Total under costing of GSAT-6A worked out to be at least ₹122 crore.** |

As can be seen from the table above, the lower cost of GSAT-6A was mainly due to exclusion of costs relating to: insurance (₹34 crore) and lower cost on account of project management (₹8 crore), salary and administration (₹5 crore), payload (₹6 crore) and battery/inertial systems (₹4 crore). The gross expenditure to be incurred for GSAT-6A would have been well above ₹150 crore had all the elements been included.

DoS replied in August 2011 that a total sum of ₹65 crore was provided for GSAT-6 for pre-investment of critical components for ground spares. DoS added that this amount included components for GSAT-6A satellite also.

The reply of DoS needs to be viewed in the light of the fact that even if the critical components for ground spares of ₹65 crore are excluded, the cost of GSAT-6A would nevertheless still remain under-costed by a sum of ₹57 crore and approval of the Union Cabinet was mandatory in this case.

**By exclusion of certain cost components, DoS was able to avoid the mandatory financial sanction of the Union Cabinet for the GSAT-6A satellite.**

## 2.8 DoS did not bring crucial facts to the notice of the Space Commission

The Space Commission is responsible for formulating the policies relating to the development and application of space science. It oversees the implementation of the Indian space programme in its meetings, where members discuss issues based on reports submitted by the Chairman of the Space Commission (who is Secretary DoS and Chairman, ISRO). Most importantly, it formulates policies for space programmes under (i) satellite communication (ii) earth observation (remote sensing) and (iii) space science.

A crucial aspect of the Space Commission's role is its financial oversight over the DoS budget and of providing specific financial sanctions to individual projects of ISRO. It is the competent authority for approval of all projects whose values are less than ₹150 crore. Projects costing higher than ₹150 crore are routed through the Space Commission and require the approval of the Cabinet.

### Issues in the approval of GSAT-6 and GSAT-6A from Space Commission

The GSAT-6 Project proposal was approved in the 104th meeting of the Space Commission in May 2005. Extracts of the minutes of that meeting revealed that the proposal presented by DoS highlighted the capabilities of GSAT-6, its benefits to users and its total cost.

A review of the agenda note for the 104th meeting of the Space Commission revealed that DoS did not bring to the notice of the Space Commission that GSAT-6 was a satellite being realised for the use of Devas, a single private customer for commercial purposes, and that its cost was being borne, not by the customer, as per the extant rules, but from the Government budget. **DoS did not bring to the notice of the Space Commission the fact that four months before the matter was placed before the Commission, it had already signed an agreement with Devas in January 2005, wherein it had committed space segment capacity of two satellites to Devas.**

In the case of GSAT-6A, SCNPO submitted a detailed note in October 2009 to the Space Commission, seeking its approval for taking up a multimedia mobile S-Band satellite mission (GSAT-6A) at an estimated cost of ₹147 crore under the INSAT programme. DoS justified the launch of this satellite by indicating that in view of the increase in demand for multimedia services, a follow-on satellite was proposed to augment GSAT-6 to cater to the demand in the sector.

It was noticed from the agenda note prepared for the 114th meeting and the minutes of the said meeting that DoS had failed to inform the Space Commission that the GSAT-6A satellite was being designed and manufactured for the sole use of Devas.

DoS misled the Space Commission by stating that 'In view of the increasing demand for multimedia services, it is proposed to have one more multimedia satellite GSAT-6A which will augment the multimedia services off GSAT-6 and to cater to the increasing consumer requirements of providing entertainment and information services to mobile units.'

The agenda note did not contain any comparison of the costs of GSAT-6 and GSAT-6A since such a comparison would have revealed how the latter had been ingeniously costed as to be brought within the ambit of the Space Commission's financial competence.

While furnishing a response on the action taken, DoS stated (January 2012) that meetings of the Space Commission would be convened at least once in a quarter and agenda notes would be sent two weeks in advance of the meetings, after incorporating the comments of the Member, Finance of the Space Commission. DoS also stated that matters relating to Antrix would be reviewed by the Commission at least twice in a year and all project proposals put up for the approval of the Space Commission would be reviewed by a Standing Project Appraisal Committee.

**The Space Commission approved two satellite missions at a cost of ₹416 crore. It is, however, not on record whether the Commission was aware that the two satellites were being designed, developed and launched from Government funds for a single customer.**

## 2.9 DoS flouted International Telecommunication Union conventions and bypassed DoT

Internationally, as per the ITU convention (World Radio Conference 2000), to which India is a signatory, it was decided to use the 2.6 GHz band (2.5 GHz to 2.69 GHz of 190 MHz) for mobile broadband services, considering the world-wide importance of this band for terrestrial fixed and mobile services. The band provides an opportunity to meet the rapidly rising demand for capacity to deliver mobile broadband services on a widespread and common basis across the world. This helps to achieve the following:-

- The direct economic benefits of economies of scale
- Ease of roaming
- Interoperability of services on a global basis
- A substantial amount of spectrum (190 MHz)

WRC 2007 imposes technical conditions because it seeks to restrict the usage of the 2.6 GHz band for terrestrial mobile broadband services only. Hence, the 2.6 GHz band is now in a unique position to be exploited as a common band for commercial terrestrial mobile broadband access services on a global basis.

Most of the developed economies in the world had auctioned or were in the process of auctioning this valuable 2.6 GHz band for the mobile broadband services. In India, due to the heavy demand for 3G spectrum in the market, the Government of India auctioned 3G spectrum in April-May 2010, ranging from 1959 MHz to 1979 MHz and earned revenue of nearly ₹67,719 crore towards entry fees for 20 MHz. Further, in the Broadband Wireless Access spectrum auction, DoT had earned a revenue of ₹38,543 crore.

For the Devas service, DoS earmarked 70 MHz of S Band spectrum in the frequency bands of 2560-2590 MHz[5], 2600-2630 MHz and 2670-2680 MHz for both telecommunication and broadcasting services. DoS/Antrix committed this frequency spectrum without obtaining the approval of the Wireless Planning & Coordination (WPC) wing of DoT, which is the custodian for terrestrial-based telecommunication services in the country.

According to the ITU Radio Regulations, the use of Mobile Satellite Service in the 2655-2690 MHz and 2500-2535 MHz bands is restricted to national transmission only. This was also reiterated by DoT in its reply of July 2010 to DoS, wherein it was stated that the spectrum planned by DoS for strategic use, was not to be shared with commercial applications. Out of this 10 MHz, 2670 -2680 MHz was earmarked for Devas against this regulation. DoS/ ISRO is yet to furnish reasons for the earmarking of MSS spectrum reserved for strategic purposes to Devas.

- Due to pressure for more S-Band spectrum for mobile broadband services, DoT had requested DoS in July 2008 to consider providing the frequency spectrum available with the latter. Director, SCNPO indicated to the WPC in September 2008, that 5 MHz broadcast satellite service spectrum in the range 2550-2555 was already in use by All India Radio (AIR). In reality, 2550-2600 MHz had actually been earmarked for Devas in 2005 itself. Similarly, the Chairman ISRO had also indicated to DoT in August 2008 that the S-Band satellite of ISRO would be used for different applications by different customers when the same had already been earmarked on exclusive basis to Devas.

DoS stated in August 2011, that it did not allocate spectrum and that this was done only by DoT. As indicated, the onus for obtaining frequency clearances in the agreement rested with Antrix. The fact, however, remained that 70 MHz of the S-band spectrum had been earmarked for Devas in the Antrix-Devas agreement.

[5] The frequency band earmarked in the Antrix-Devas agreement was subsequently changed to 2550-2600 MHz in the proposal seeking financial sanction of Union Cabinet for GSAT-6 satellite.

**DoS misled DoT regarding actual use of spectrum in the S-Band. In July 2008, it stated that the spectrum was in use by AIR. In August 2008, it stated that the spectrum was reserved for different users.**

**The truth was that DoS concealed the name of Devas from DoT, as also the fact that in both instances, spectrum had been reserved for Devas, a private operator.**

### 2.10 DoS did not get the Antrix-Devas Agreement vetted by Ministry of Law and by Member Finance (Space Commission)

It was seen that the terms of the transponder lease agreements (TLAs) were to be specific to the services for which transponders were leased, whether it was for VSAT, TV, DSNG or DTH services. This was so because the services, licensing and regulatory arrangements/ mechanisms were peculiar to each service. These TLAs were to be approved specifically for each service by the Ministries of Law and Finance.

The agreement template used in the Antrix-Devas agreement was different. It was not approved by the Ministry of Law or by the Member (Finance) of Space Commission who is the representative of the Ministry of Finance in DoS. SCNPO replied in April 2011 that the template approved by Ministry of Law in the transponder lease agreement for the lease of the satellite capacity of INSAT 2E to INTELSAT, an international organisation for its services around the globe, was being used for other lease agreements. This reply must be viewed in light of the fact that the formats of transponder lease agreements were service-specific and were to be formulated differently for different satellite-based communication services. Moreover, reference to the Ministry of Law was not just a pro forma procedure but a control mechanism to guarantee protection of national interest.

DoS confirmed in August 2011 that the Antrix-Devas Agreement was not vetted by the Ministry of Law.

**DoS bypassed important controls in the form of vetting of the transponder lease agreement by the Ministry of Law and the Member (Finance) of the Space Commission.**

## 2.11 Devas did not possess the requisite permissions to operate the service for which the Antrix-Devas agreement had been signed

DoT is the authority for granting licences for operating internet services. TRAI as the regulator also grants clearances for this activity. Uplinking/ downlinking guidelines for internet (data, audio and video) of Indian satellites have not yet been framed in the country. As such, approvals/ licences can be obtained/ issued only when the guidelines have been framed.

Devas secured an All-India Internet Service Provider's Licence in May 2008. This licence could be used for internet access and internet telephony but not to uplink/downlink through satellite. This licence in the possession of Devas was not specific to the hybrid S-DMB service proposed by Devas.

This position was reiterated by the TAG sub-committee in its 129$^{th}$ meeting of January 2009 which went into the issues relating to the Devas experimental plan. The sub-committee observed that Voice and Virtual Private Networks proposed in the Devas services would not be permitted under the licence currently held by it.

**Devas was ineligible to provide the hybrid services planned by it as it possessed neither a licence from the approving authority, nor a clearance from the regulator.**

# Chapter 3 Undue favours to Devas

## 3.1 Introduction

The features of the Antrix-Devas agreement are as under:

**The Antrix-Devas agreement allowed Devas to provide multiple services such as 4G services (improvement in 3G services), mobile TV services both through satellite and terrestrial route, DTH services, etc., on the same platform.**

**It provided for the launch of two customer-specific satellites for Devas by leasing all 20 transponders of these two satellites.**

**70 MHz of S-Band was earmarked for spectrum in 2.6 GHz band to Devas as a part of leasing out the transponders of the two satellites.**

**Orbital slot was to be allocated for an indefinite period to Devas.**

**It indicated a sub-licensing clause which would enable Devas to sub-lease satellite transponders to others.**

## 3.2 DoS negotiated exclusively with Devas

ISRO generally conducts meetings with INSAT users/ service providers to ascertain the demand in thematic sectors such as (i) telecommunications through VSAT operations; (ii) broadcasting through TV/DTH Operations; (iii) educational and developmental communications; (iv) security communications for Defence Ministry/ Services and (v) meteorological applications. The realisation and launch of satellites is planned based on the needs of both Government and non-Government users.

ISRO did not furnish any document to Audit by which we could arrive at a reasonable assurance that it had conducted any users' meet to assess the requirement/demand for the S-DMB services. ISRO replied in August 2010 that GSAT-6 proposals were formulated based on assessment of the need to introduce multimedia mobile services in the country and only one party (M/s Forge Advisors) had come forward to carry out the services.

The reply of ISRO is to be seen in the context that the new S-DMB service had not been approved by the Union Cabinet, and that there was no regulatory framework in place for launching Devas services in the country. DoS invited no public offers for S-DMB services before launching the satellites.

Further, entering into the agreement with Devas was based on exclusive negotiations with M/s Forge Advisors, which had floated Devas for this very purpose. Later, in March 2011, DoS agreed that it had not carried out any need assessment before the launch of the GSAT-6

& GSAT-6A satellites. It qualified this fact by stating that user meets were not scheduled for each satellite.

DoS confirmed in August 2011 that a need assessment was not conducted before the proposals in respect of GSAT-6 and GSAT-6A were formulated and it was also true that a user meet was not held for the two satellites.

**Before the offer of S-DMB services, DoS did not ascertain needs nor did it invite applications from interested service providers.**

### 3.3 DoS ignored the potential benefits of 2.6 GHz band to Government

Seventy MHz of the 2.6 GHz spectrum was intended to be made available to Devas. The market value of spectrum depends on the volume of its customer base/ potential customer base (future utilisation potential), telephone density, population, area covered, etc. The value of a telecom and broadcasting service depends upon its demand and business potential in the market. While the target group for the business opportunities of 3G was only the mobile population, the Devas services aimed at vehicles, TV households and broadband users, in addition to the mobile phone population in India. The breadth of services in the downlink of the hybrid S-DMB was to be more than 24 MHz (8 MHz for three services) for broadcasting services with a flexible option to interchange between three services (video, audio and data) and 8 MHz for two-way services in return link[6]. These facilities would make the Devas services better comparable to alternate and existing technologies/ services such as 3G, DTH etc. in India. The table below brings out a comparison of the services in terms of some parameters.

**Table-3 : Comparison of 3G, DTH and S-DMB services**

| No | Services | MHz available for terrestrial operations | MHz available for Space operations | Potential customer base in Million | Number of service providers | Revenue received by Government for the entry in India (₹ in crores) |
|---|---|---|---|---|---|---|
| 1 | 3G | **20** | Nil | 851.70[7] | 8 | 67,719 |
| 2 | DTH | Nil | 2700 | 35.56[8] | 7 | Nil |
| 3 | S-DMB | 70 (on reuse) | 70 | 1008.40 | 1 | Nil |

[6] A return link is the transmission link from a user terminal to the central hub.
[7] Reported by TRAI as of 30 June 2011, based on which transition to 3G users is assumed.
[8] Source: TRAI

The future business potential of Devas services is evident from its potential customer base of 1008.40 million. The Devas services aimed at 851.70 million mobile population, 23.70 million vehicle population and 133 million[9] TV households in India. The Devas services proposed to provide telecom and broadcasting services in the mobile and fixed environment. This potential was to be utilised by one service provider, viz., Devas alone. Considering the above business opportunities in India, Devas estimated to be cash flow positive in two to three years' time, considering the investment in comparison to the seven to 10 years required for alternate services such as 3G.

Due to heavy demand for the 3G spectrum in the market, the Government of India had auctioned in May 2010, 20 MHz in 3G spectrum ranging from 1959 MHz to 1979 MHz and earned revenue of ₹67,719 crore towards entry fees. Further, in the BWA spectrum band of 2300-2400 MHz auction in May 2010, Government had earned revenue of ₹38,543 crore in the auction of two blocks of 20 MHz spectrum on pan-India basis.

In the cases of all new broadcasting or telecommunications services introduced by the Government, specific Cabinet approvals were obtained. Necessary clearances from the concerned authorities were also received. In the case of DTH, for example, MIB initiated the proposal; the Cabinet approved the service; MIB then stipulated guidelines and licencing conditions; the WPC wing allocated the required spectrum; the licences for the service were granted by MIB and the transponder capacity was allocated by DoS. During this process, the service was evaluated in terms of its parameters, including the benefit streams for the Government. Given the uniqueness of the S Band in terms of its versatility and availability for both broadcasting and mobile satellite services, the Devas service should also have been evaluated thoroughly to derive the best interest of the Government.

It is pertinent to mention that the Secretary, DoT in a reference to DoS, emphasised (July 2010) the need for ensuring a level playing field for service providers using terrestrial spectrum. Pointing to the auction of BWA spectrum, he stated that the "commensurate amount must be levied as spectrum charges for providing any commercial services including digital multimedia". The Wireless Adviser of DoT stated (March 2012) that the 'price discovered' in the course of the BWA auction could be taken as value of spectrum in the S Band since the BWA spectrum was from this band. The BWA auction generated ₹ 38,543 crore in revenues for the Government for a bandwidth of 60 MHz. As against this, 70 MHz of spectrum was being earmarked for Devas.

[9] Source: TRAI.

It is noteworthy that BWA was a wireless internet broadcasting service through terrestrial towers. The proposed Devas service was a superior service since it sought to provide continuous wireless services to consumers who used fixed as well as mobile receivers through satellite and terrestrial systems. Thus it could cater to the needs of customers even at remote locations where terrestrial towers could not be set up. This being the case, it is evident that the service being offered by Devas had considerable fiscal potential for the Government. By not following the due process for this new service, the revenue interests of the Government seemed to have been totally ignored.

DoS stated in August 2011 that it did not allocate spectrum to any user. DoS only leased satellite transponders, i.e., space segment capacity to users at prices stipulated by the department, based on recommendations of the pricing committee set up by it as per the SATCOM policy.

The reply of DoS needs to be viewed in the background of the fact that the requisite licencing conditions and regulatory framework for SDMB services should have been in place prior to signing the transponder lease agreement with Devas by the Government. The reply of DoS confirms the position that DoT was the authority with regard to allocation of spectrum, which was instead committed by DoS to Devas. Further, in the agreement entered into with Devas, the onus for obtaining all regulatory approvals rested with Antrix. The reply of DoS does not address the issue of earmarking of valuable spectrum to a private party.

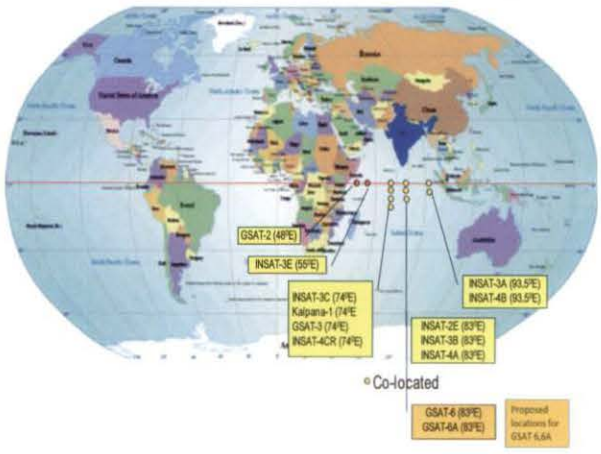
**DoS virtually gifted a valuable and potentially high profit-earning band to Devas.**

### 3.4 Allocation of a valuable orbital slot for indefinite period to Devas

ITU allots orbital slots for satellites of individual countries. The changes made by ITU in the year 1997 make orbital slot filings a long-drawn and critical activity, which requires vision and careful coordination as ITU allows only the administration of each country to file for orbital slots. It is important for each country to prepare orbital slot filings for country-specific slots and occupy the allocated slots within the due diligence period. The long-drawn process of filing and coordination with ITU and the due diligence principle, therefore, make filings for India-specific orbital slots a crucial process. The decision-making process should, therefore, be objective, transparent and well-documented.

In addition to assigning orbital slots, spectrum planning and coordination are very important in planning and implementing space projects. A large number of co-located satellites can potentially result in collisions and polarisation interference [10] in spectrum. Therefore, the strategy of co-location of satellites has to be considered before planning a satellite's movement in an orbital slot.

**Location of Geo-stationary Satellites of ISRO**




DoS decided to use its scarce orbital slot at 83° East for the two co-located satellites (GSAT-6 & GSAT-6A), to be used exclusively by Devas. Further, the related S Band spectrum was also earmarked for an indefinite period for use by Devas.

DoS stated in August 2011 that the orbital slots and the spectrum remained the property of India and the agreement for lease of transponders was for a definite period.

The contention of DoS needs to be viewed in the context of the agreement which provided for a period of lease which covered the entire expected life of the two satellites (PS 1 and PS 2) of 12 years. Additional capacity was to be provided based on a three- year notice subject to entering into a fresh lease agreement and regulatory approvals.

**DoS earmarked a valuable and prime orbital slot for Devas for an indefinite period.**

### 3.5 Devas capitalised on the agreement signed with Antrix

Devas Multimedia Limited was registered by former employees of ISRO / DoS in December 2004 under the Indian Companies Act, 1956, initially with 10,000 shares with a face value of ₹10 each. The number of shares increased to 1,81,824 shares by March 2010 as indicated in Table-5 below. The detailed information is given in Annexure 1.

[10] Interference which causes a change in the orientation of electromagnetic waves.

**Table-5 : Status of shares at the time of incorporation and as of March 2010**

| No | Particulars | Status of the investor | At time of incorporation | At the end of March 2010 |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| 1 | D. Venugopal | Ex. ISRO official | 9000 | **9622** |
| 2 | Umesh M | Ex. ISRO official/LDC | 1000 | **267** |
| 3 | CC/ Devas Mauritus Ltd | Foreign Investor | 0 | **31350** |
| 4 | Telecom Devas Mauritius | Foreign Investor | 0 | **31350** |
| 5 | Deutsche Telekom Asia Pvt Ltd | Foreign Investor | 0 | **36749** |
| 6 | **M.G.Chandrasekhar** | Ex. ISRO official | 0 | **35223** |
| 7 | Ramchadran Viswanathan | Employee of M/s Forge Advisors | 0 | **9623** |
| 8 | Paresh Shah | Employee of M/s Forge Advisors | 0 | **9622** |
| 9 | James Fox | Employee of M/s Forge Advisors | 0 | **4179** |
| 10 | D Natraj | Ex. World Space employee | 0 | **267** |
| 11 | Abhishek Jain | Employee of M/s Forge Advisors | 0 | **267** |
| 12 | Clarence Irving | Employee of M/s Forge Advisors | 0 | **267** |
| 13 | Amirali Hudda | Employee of M/s Forge Advisors | 0 | **533** |
| 14 | Garry M Parson | Columbia Capital employee | 0 | **798** |
| 15 | Lawrence Babbio Junior | Telecom Devas employee | 0 | **798** |
| 16 | Devas Employee Mauritius Ltd | Mauritius limited company | 0 | **4511** |
| 17 | Murugappan A. | Ex. Defence personnel | 0 | **6400** |
| 18 | Miscellaneous transfer | | 0 | **-2** |
| | **Total** | | **10000** | **181824** |

We observed that Devas issued capital at par to its employees and the employees of M/s Forge Advisors at a substantial premium. The shareholding pattern along with share premium raised as on 31 March 2010 is given in Table-6.

**Table-6 : Share-holding pattern of Devas**

| Description | Ex-ISRO/DoS /Defence employee | Persons associated with M/s Forge Advisors | Investment by foreign investors | Others | Total |
|---|---|---|---|---|---|
| **Total numbers of shares of ₹ 10 each held** | 51512 | 24758 | 101043 | 4511 | 181824 |
| **Total share premium paid (₹in lakh)** | -- | ---- | 57566.04 | 316.34 | 57882.38 |
| **Total amount paid (₹in lakh)** | 5.15 | 2.48 | 57576.14 | 316.79 | 57900.56 |
| **Average share premium paid per share of ₹10 each (in ₹)** | --- | ---- | 56972 | 7013 | 31834 |
| **Range of share premium paid** | -- | ---- | 21446 to 126821 | 7013 | 7013 to 126821 |
| **Value of shares based on highest premium (₹ in crore)** | 653.28 | 313.98 | 1281.44 | 57.21 | 2305.91 |

Devas, without engaging in any trading, manufacturing, or ground segment development activity, could raise an amount of ₹575.76 crore from the sale of its 1,01,043 shares, having face value of ₹10 each, to three foreign investors at premia ranging from ₹21446 to

₹126821 per share. The value of 51,512 shares allotted to ex-ISRO/DoS /Defence employees at par increased from ₹5.15 lakh to ₹653.28 crore even before the commencement of activities by Devas.

In a note put up by the Executive Director, Antrix, Sh. K. Sridharamurthy, in July 2006, it was proposed to amend Article 3(i) of the Antrix-Devas contract to read as 'the leased capacity was to be put up for renewal at least two years before the end of 12-year period or anticipated life of the satellite for another 12 years at a reasonable lease fee to be mutually agreed upon.'

> ***"Such amendment would reassure the investors of the continuity of the new service under reasonable terms and conditions".*** **Executive Director of Antrix, July 2006.**

The note was approved by Chairman ISRO and Secretary, DoS, Dr. G Madhavan Nair. Such support provided by DoS helped Devas, a private Company, to raise substantial premium. The realisation of ₹1,26,821 per share in the year 2009-10 took the value of the Company to ₹2305.91 crore, increasing the value of Devas shares to more than 12682 times in the 2005-10 period. The value of the shares of a market leader in telecommunication services such as Bharti Airtel in the same field had risen by only 25 times during the period 2003-2010. This was indicative of the embedded value granted to Devas by DoS in this contract.

> **Devas could secure substantial foreign direct investment on the basis of the business potential of the deal it had made with Antrix. The three Principals of M/s Forge Advisors viz., Sh. Ramchandran Viswanathan, Sh. Paresh Shah and Sh. James Fox are also shareholders of Devas as on date.**

DoS, in its reply of August 2011, confirmed the facts brought out in audit. Further, while furnishing information on the action taken, DoS stated (January 2012) that the interim report of the Ministry of Corporate Affairs (MCA) indicated many violations of Company law by Devas, warranting action. Investigation for possible acts of omission and commission by Devas were under process by the MCA and the Department of Revenue (DOR). DoS added that an investigation report of MCA and feedback from DOR were awaited.

## 3.6 DoS devised the costing of satellites GSAT-6 and GSAT-6A to help Devas

The SATCOM policy stipulated that DoS was to fix prices for the transponders. Accordingly, DoS constituted a Standing Pricing Committee for fixing the prices of transponders considering the actual costs, reasonable return on investment, and the market conditions in the year 2002. DoS did not fix the transponder lease charges for GSAT-6 and GSAT-6A through a mechanism of the Standing Pricing Committee as was done in the case of INSAT 3A, 3B and satellites of the INSAT 4 series. In the case of Devas, it was observed that:

(a) The Standing Pricing Committee did not fix the price of the transponder lease;

(b) Chairman, ISRO/ Antrix mandated this task to the Dr. Shankara Committee for financial evaluation and negotiation. This committee did not incidentally have any financial expert in it.

(c) The Committee did not work out the total costing for the projects of GSAT-6 and GSAT-6A, considering the extent of risk being undertaken under the agreement and return on investment as well as marketing expenses and commission payable to Antrix. It negotiated with M/s Forge Advisors on the offer made by them and planned to increase transponder lease charges once Devas's operations became cash positive.

DoS estimated the cost of GSAT-6 and GSAT-6A as detailed below.

**Table-7: Cost of GSAT-6 and GSAT-6A**

| No | Description | Amount (₹in crores) |
|---|---|---|
| 1 | DoS cost for GSAT-6 (including insurance) | 269.00 |
| 2 | Launch Services cost | 175.00 |
| 3 | Total (1)+(2) | 444.00 |
| 4 | Overheads[11] (administrative) on project to be charged at 10 % of (3) | 44.40 |
| 5 | Total project cost (3) + (4) | 488.40 |
| 6 | Operational cost towards operation and maintenance of satellite by MCF for the designed life of satellite viz., 12 years | 36.00 |
| 7 | Total Cost (5) + (6) | 524.40 |
| 8 | DoS cost for GSAT-6A satellite [12] | 424.20 |
| 9 | DoS cost for both the satellites (7) + (8) | 948.60 |
| 10 | Return on investment for DoS @ 15 % of (9) | 142.29 |
| 11 | Commission for Antrix @ 15% of (9) and (10) | 163.63 |
| 12 | Total cost to DoS (9), (10) and (11) | 1254.52 |

[11] According to DoS instructions in order No. B-31012/6/2006-Sec.3 dated 27 October 2006, administrative overheads of 10 *per cent* were to be charged.

[12] Cost of GSAT-6A included satellite cost of ₹147 crore, launch service cost of ₹175 crore, administrative overheads of ₹32.20 crore, insurance cost of ₹34 crore and operation and maintenance cost of ₹36 crore.

DoS worked out the cost as ₹1254.52 crore. In reality, it would have received ₹1120.76 crore. This was the sum total of (a) annual lease charges receivable @ US $ 9 million per year for 12 years per satellite and (b) upfront capacity reservation fee of US $20 million per satellite. The total charges for two satellites thus amounted to US $ 256 million. In Rupee terms, this amounted to ₹1120.76 crore. The Antrix-Devas agreement, therefore, could not have recovered the total cost incurred by DoS.

DoS, in its reply of August 2011, stated that as per the Antrix-Devas agreement, an increase in lease charges due to yearly changes in the wholesale price index worked out as ₹1310.29 crore as against ₹1120.76 crore as estimated by Audit.

The reply of the department is not tenable since the benefit stream was indexed to the wholesale price index and not to the cost stream. Further, the total cost to DoS of ₹1254.52 crore was worked out without considering other revenue operations and maintenance expenditure incurred, such as expenditure on space consumables held in their stock, launch service cost, insurance, etc., which on an average worked out to ₹452.98 crore[13].

**DoS fixed substantially lower transponder lease charges for Devas.**

ISRO had incurred an expenditure of ₹223.41 crore (as of February 2011) towards the development of these two satellites developed as per the requirement of Devas to suit Devas services.

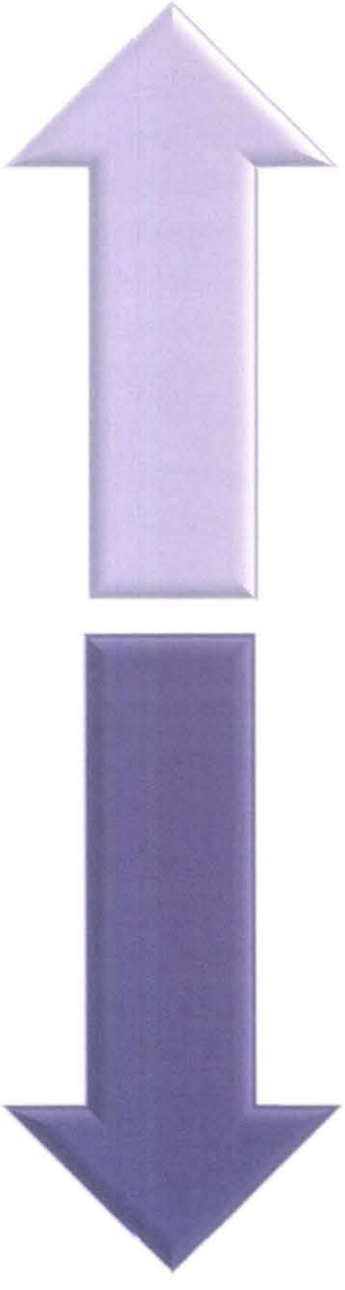
While furnishing a report on the action taken, DoS stated (January 2012) that appointment of a Director-level officer for costing was under process. The Chief Advisor (Cost) in the Ministry of Finance was consulted for the costing of INSAT transponders.

[13] Revenue Operation and Maintenance (OM) expenditure of DoS for the 11 communication satellites in operation during 2004-09 is ₹1203.08 crore. The OM cost per satellite per year therefore would be ₹21.87 crore. The OM cost for 12 years for one satellite would be ₹262.49 crore. Therefore, for two satellites, the OM cost works out to ₹524.98 crore. The underestimated OM cost excluding the expenditure of MCF indicated by DoS for two satellite of ₹72 crore worked out to ₹452.98 crore.

## 3.7 What was unique about the Devas agreement

Until it signed the Devas agreement in January 2005, DoS had pursued two contractual models in its interface with customers. The highlights of these two forms of relationships were as follows:

**Table-8: Customer-specific satellite agreements against transponder lease agreements**



**Customer-specific satellite agreements**

- Fully funded by customer
- Customer has exclusive rights on satellite
- No need for ICC scrutiny as not funded through INSAT budget
- Customer responsible for acquiring regulatory permission, frequency allocation, license, orbital slot
- Customer to establish satellite control centre
- Involvement of customer in development, launch and operation of satellite

[Examples- W2M, Hylas]

**Transponder lease satellite agreements**

- Developed and launched by ISRO using INSAT budget
- ISRO assistance for acquiring Regulator's permission, frequency allocation, licence etc
- No need for customer to establish satellite control centre
- No payment to be made for orbital slot by customer
- Only annual lease charges payable
- Satellite capacity allotment on non-exclusive basis
- ICC approvals mandatory since satellite is part of INSAT System
- Fall within administrative and financial control process of Government
- No involvement of customer in development, launch and operation of satellite
- [Examples- INSAT 4A, 4B, 4CR, 4G]

The Devas agreement was a combination of the above two types of commercial arrangements DoS had hitherto entered into with other customers. There were in-built checks and balances in the two forms of contracts, which created a level playing field for the customers without compromising on the interests of DoS. It is interesting to note that the model created for Devas picked elements from both forms of agreements in a manner which would benefit Devas.

**Benefits which were of customer-specific satellite mode**

1. No need for ICC approvals
2. No requirement to apply DoS administrative and financial control procedures such as vetting/approval by Ministry of Law or Member (Finance) of Space Commission.
3. Customer's involvement in design, development, launch and operation of satellite.
4. Satellite capacity exclusively earmarked for customer.

**Benefits which were of transponder lease mode**

1. Satellite to be funded from DoS budget.
2. No need to establish satellite control centre.
3. No payment for orbital slots.
4. DoS to assist in obtaining regulatory permission, frequency allocation, licence etc.

DoS, while accepting the facts of the paragraph, contended that the objective of this exercise was to ensure that certain technology that would otherwise not be available to India would be obtained under this agreement and in return, the agreement would provide for a proper business return for Devas.

The reply of DoS is untenable since it does not address the fact that the S-DMB service was an untested technology, an unlicenced activity and a business proposition whose market feasibility had not been assessed in a systematic manner. There was also nothing on record to establish the technical competence of Devas to roll out the new service. The business returns to Devas referred to in the reply appeared to be skewed in the Company's rather than the nation's favour.

**The Devas agreement was a cherry-picking exercise in which DoS picked and chose those elements from two contrasting forms of contractual agreements which benefitted Devas and not the Government.**

### 3.8 How did the Antrix-Devas agreement conditions benefit Devas

According to the SATCOM policy, the transponders of the INSAT system were to be allocated to non-Governmental users by signing lease agreements between DoS and the customers, spelling out technical, financial, contractual and management clauses.

**The terms of the Antrix- Devas contract were one-sided and advantageous to Devas as compared to other transponder lease agreements.**

The system of checks and balances failed in the case of the contract with Devas for leasing out all transponders of GSAT-6 and 6A. A detailed comparison of the terms of the Devas contract with that of other transponder lease agreements to highlight the extent of undue advantage to Devas is placed in **Annexure-2.**

**What were the terms beneficial to Devas?**

The terms of the agreement were such that in the case of failure of satellites, all risks and losses were to be borne by DoS. Even in the case of success of satellites, DoS was to bear substantial financial load (difference between costs and receipts towards lease charges). Audit test-checked 25 transponder lease agreements entered into by DoS and compared these with the Devas contract to find deviations/ modifications in the Devas contract. (Details in Annexure-3). The terms of the Antrix-Devas agreement were not precise and contained conditional clauses, generally one-sided, in most cases open-ended and advantageous to Devas as detailed below:

| | |
|---|---|
| **1. Leased capacities** | Allocation of satellite capacity exclusively to Devas was against the principle of "non-exclusive allocation" of satellite capacity stipulated by ICC. |
| **2. Period of lease and terms and conditions** | Devas was allowed an open-ended lease for the entire expected life of the two satellites. Additional satellite capacity was to be provided based on a three-year notice. Therefore, satellite capacity, valuable 70 MHz spectrum and an orbital slot were earmarked for an indefinite period to Devas without any financial consideration. |

| | |
|---|---|
| **3. Interruption in the provisions of leased capacity** | The clauses relating to interruptions extended a big advantage to Devas in cases of interruptions, instead of the smaller one-hour discount offered to other customers. |
| **4. Board Participation** | Antrix was offered a position for one of its officials on the Devas Board, which it accepted. This was apparently to create an impression to the international investors of Devas that the project was a collaborative project. |
| **5. Assignment** | Devas was permitted to sub-license, assign or sell all its rights including scarce and valuable spectrum without any approval from Antrix. In other transponder lease agreements, sub-licensing/assignments were not allowed. |
| **6. Governing law** | The arbitration clause of the contract recognised Devas as an international customer though their registered address as per the contract was Bangalore. International agreements binding on a department of the Government of India i.e. DoS involving international customers, arbitration proceedings, etc., required under international law were to be cleared by the legal cell of DoS and vetted by the Ministry of Law. This was not done in the case of this contract. |
| **7. Liability for damage** | Devas was unique in that it was to be compensated for delay in lease, and for an amount as much as $ 5 million without approval of the Ministry of Law. |

The above brings out how the contract agreement with Devas was unique in that it accorded special benefits to the private entity and loaded upon the Government, risks and liabilities that existed in none of the other contracts.

As events turned out, exploiting the provisions of the one-sided contract, M/s Dua Associates, Advocates of Devas, served Chairman, Antrix with a legal demand notice on 11 February 2011 in terms of paragraph 2.1.2.2 of Exhibit B of the Antrix-Devas agreement for INR equivalent to US $5 million within 14 days of receipt of the notice as a penalty for the delay in the launch of spacecraft from 22 June 2009 to 21 June 2010.

The Antrix-Devas agreement was terminated by the Government on 23 February 2011. Devas filed an arbitration demand on 29 June 2011 before the International Court of Arbitration of the International Chamber of Commerce. Devas was able to file the arbitration demand before the International Court, since unlike other transponder lease agreements, which provided that disputes between parties were to be settled by arbitration in accordance with rules of arbitration of the Indian Council of Arbitration and awards made in pursuance thereof, in the case of Devas, the agreement was crafted to provide this special dispensation to it.

DoS stated in August 2011, that the agreement was terminated in February 2011. In June 2011, Devas filed an application before the International Court of Arbitration and this petition was opposed by Antrix on the ground that the seat for adjudication under the agreement was New Delhi and the applicable laws were the laws of India.

The reply of DoS confirms Audit's contention that the beneficial clauses of the Antrix-Devas agreement were now being invoked by Devas to bolster its legal position, to the disadvantage of DoS.

Developments in respect of the arbitration petition filed by Devas before the International Court of Arbitration of the International Chamber of Commerce confirm the view held by Audit that the arbitration clause of the Antrix-Devas agreement singularly benefited Devas. Subsequent developments on the Antrix- Devas deal, inter alia, revealed the following:

- Based on the petition of Devas, the International Chamber of Commerce unilaterally appointed Dr Justice A.S. Anand as the arbitrator without consulting Antrix.

- The International Chamber of Commerce also constituted an arbitration tribunal, appointing a foreign national as the Chairman of the tribunal for arbitration between the two Indian companies, Devas and Antrix.

- In July 2011, Antrix issued a notice of arbitration to Devas appointing retired Justice Sujata V. Manohar as arbitrator.

- Antrix filed an arbitration petition before the Hon'ble Supreme Court of India on 5 August 2011 for directions to Devas to nominate its arbitrator in accordance with the agreement and the United Nations Commission on International Trade Law (UNCITRAL) Rules, to adjudicate upon the disputes.

- Antrix filed an application before the Supreme Court for interim relief seeking to restrain Devas from proceeding in any manner with the International Chamber of Commerce.

- The International Chamber of Commerce demanded an advance of USD 325,000 as arbitration charges from Antrix.

- Antrix also filed an arbitration application before the City Civil Judge of Bangalore on 5 December 2011, praying for restraining of Devas from proceeding in any manner with the International Chamber of Commerce arbitration, contrary to the agreement and restraining the arbitration tribunal constituted by International Chamber of Commerce under its rules, from proceeding with the arbitration.

- Devas filed a statement of claim before the International Chamber of Commerce in February 2012, wherein it sought either performance of the agreement by Antrix, or a compensation of USD 1.6 billion (₹ 8240 crore[14]) plus interest at a rate to be decided by the tribunal, costs, attorney's fees etc.

It is, therefore, evident that the contract entered into with Devas was one-sided and was prima facie advantageous to it. This has resulted in opening of many fronts in various legal fora to be defended by Antrix and consequent expenditure, both in defending the legal challenges and possible payment of damages to Devas.

[14] USD= ₹51.50

# Chapter 4 Governance and Conflict of interest issues

## 4.1 Introduction

The mode of delivery of public goods has been continuously evolving. New structures have emerged in the past few decades and there is an increasing expectation from common citizens and civil society that Governments should deliver the highest standards of integrity. In the recent past, issues of probity, integrity and accountability in all spheres, including the Government, have been exercising the nation. The explosion of new information and high-end technologies as in the case of the satellite digital multimedia broadcasting services, provides hitherto unexplored opportunities and raises public expectations. At the same time, it requires development of appropriate arrangements to address how accountability issues can be dealt with in the ever-changing structures of delivery of public goods and services. The issues of accountability and how best to address them would need to be answered in ways that best serve the interest of the public and that of the Government.

## 4.2 Subversion of the governance framework

The examination of the Antrix-Devas agreement raises a number of issues with regard to governance. Good governance is essential for ensuring proper performance, stewardship of public money and emergence of best outcomes. We have attempted to examine the Antrix-Devas agreement in terms of commonly-accepted benchmarks of good governance.

The benchmarks of good governance have been outlined in the following diagram:

**Public Interest: Personnel in Government are expected to maintain public trust in their institutions by achieving best outcomes and seeking to advance public good at all times.**

The Antrix-Devas agreement was a classic case of promotion of interest of an individual private entity viz. Devas, at the cost of public interest. The agreement contained clauses which were one-sided and to the advantage of Devas. In allocating valuable spectrum to Devas the revenue interests of the Government were altogether ignored. The earmarking of a prime orbital slot to be used exclusively by Devas for an indefinite period was further testimony to abdication of the country's interest. The SATCOM policy which required that transponder capacity should be made available to the commercial sector on sound business lines, was disregarded.

**Accountability: Government officials must be accountable for their decisions and actions to the public and must submit themselves to whatever scrutiny is appropriate to their office. Accountability involves public officials giving an account of their actions as well as being held to account where the use of public resources is concerned.**

In the Antrix-Devas agreement, the findings of Audit, as detailed in Chapters 2 and 3, reveal serious failures in terms of this governance parameter. Facts were concealed from the Union Cabinet and the Space Commission, which were the competent decision-making authorities for obtaining financial sanctions.

**Transparency in decision-making: Holders of public office should be as open as possible about the decisions they take and the reasons for their decisions and actions should be transparent.**

The fact that DoS had already signed an agreement in January 2005 with Devas was concealed from the Union Cabinet, together with the fact that the satellite was being launched for a single private customer viz. Devas. This fact was also not brought to the notice of the Space Commission. This indicated lack of transparency. The introduction of new communication services without following a laid-down procedure, such as inter-departmental consideration, obtaining the approval of Cabinet etc. is another instance of the lack of transparency in the instant case.

**Ethics and integrity: Personnel in government are expected to make decisions and act without consideration of their private interests.**

The minutes of the Technical Advisory Group (TAG) meeting circulated by DoS sought to create the impression that the Devas services bore the stamp of TAG's approval. In reality, this was not correct. This is discussed in para 4.5.2.

**Lack of arbitrariness: In carrying out the business of Government, holders of public office should make choices based on merit.**

The events leading to the signing of the Antrix-Devas deal in January 2005, reveal that there was no attempt to identify any other partner for providing the Satellite Digital Multi-media Broadcasting Services. DoS merely rubber-stamped the proposal made by M/s. Forge Advisers in 2004, seeking to legitimize it by appointing a Committee to examine the proposal of this private entity. Clearly, this benchmark of good governance did not receive the attention it deserved.

**Segregation of duties: Good governance requires that Government officials be clear about their roles and responsibilities and behave in ways which are consistent with those roles. Clarity about roles also helps stakeholders to understand how the governance system works and who is accountable for what.**

With regard to the segregation of duties, the roles of the key stakeholders viz. DoS, the Space Commission, the INSAT Coordination Committee (ICC), ISRO and Antrix were clearly laid down. However, the concentration of roles and responsibilities of each of these organizations/committees in a single individual, propelled the agenda of a private entity, that was not in the interest of the Government.

In addition to the governance issues discussed under Chapters 2 and 3 and summarized above, further issues regarding governance and conflict of interest are discussed in the succeeding paragraphs.

## 4.3 Concentration of many roles in one official

The strength of any entity's internal control system is the method by which it ensures that personnel throughout the organisation are working to serve public interest without imposing unintended or excessive costs on it or without placing other interests (such as their own or clients' interest) before those of the entity.

However, an entity headed by a person with multiple functional roles may at the least, be vulnerable to errors of decision-making and, at worst, may potentially expose the organisation to risks of manipulation and fraud.

In making decisions for the entity which they head or which employs them, public officials need to be alive to the potential consequences arising from them. Questions such as, 'Do the decisions cast aspersions on their objectivity? Is their participation in the decisions fair and reasonable? Have any steps been taken to record a potential conflict of interest and to restrict their own roles in light of the need for fairness and accountability?' need to be asked.

Instances of how decision-making proved disadvantageous to DoS reported in various Audit Reports of the Comptroller and Auditor General are discussed in Annexure-4.

DoS stated in August 2011 that it had addressed this matter.

**4.3.1. Dr. G. Madhavan Nair performed multiple roles** between 2004 and 2009 when the Antrix-Devas agreement was signed and operationalised. These were as follows:


- **As Chairman ISRO**

Dr. G. Madhavan Nair appointed the Dr. Shankara Committee to examine the offer submitted by M/s Forge Advisors, USA in April 2004, proposing to introduce Devas services in the country.

He mandated this Committee to finalise the financial aspects of the proposal submitted by M/s Forge Advisors, USA. The Committee did not include any member with financial

expertise. The Committee submitted its report in January 2005. In the very same month, Antrix signed its agreement with Devas.

- **As Chairman, Antrix**

Dr. G. Madhavan Nair allowed Antrix to sign a transponder lease agreement with Devas against the stipulation of the SATCOM policy.

He authorised the then Executive Director, Antrix to sign the Antrix-Devas agreement. The terms of this agreement were heavily loaded against Antrix and included a stiff penalty to be paid by it in case it delayed delivery of satellites.

- **As Secretary, DoS**

Dr. G. Madhavan Nair tendered a Cabinet Note seeking financial sanction for the design, development and launch of the GSAT-6 satellite, in which the fact that the satellite was being realised for a specific customer was concealed. The Union Cabinet was given the impression that several firm expressions of interest had been received. In reality, there was only one Company with whom negotiations were held and DoS had already inked a deal with this Company, Devas, *before* approaching the Cabinet.

- **As Chairman, Space Commission**

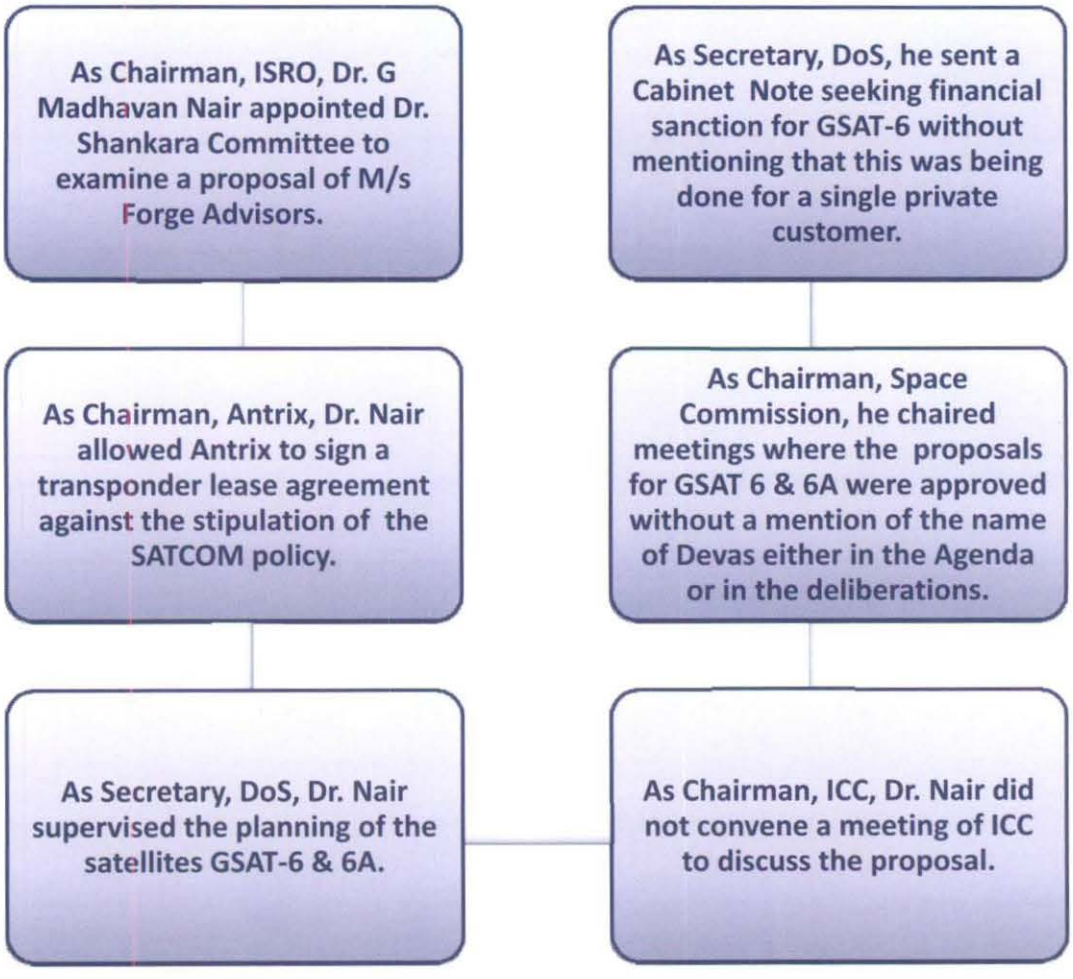
Dr. G. Madhavan Nair, as the Chairman of the Space Commission, chaired its 104$^{th}$ meeting in May 2005 and its 114$^{th}$ meeting in October 2009, during which the proposals seeking financial sanction were approved by the Space Commission for the GSAT-6 and GSAT-6A satellites respectively. In both these meetings, the position that these two satellites were being specifically developed for Devas was not brought to the notice of the Commission.

- **As Chairman, ICC**

Dr. G. Madhavan Nair, as Chairman INSAT Coordination Committee (ICC) did not convene a single meeting of the committee after 2004. Thus the views/concerns/interests of key stakeholders (represented through Secretaries of the respective Ministries/departments concerned) were effectively prevented from being a part of the decision-making process.

In different capacities, Dr. G. Madhavan Nair provided the momentum of decision-making at various stages of the Antrix-Devas agreement.

**Table-9: Dr. Madhavan Nair's different roles**




DoS stated in August 2011 that the Secretary, DoS had relinquished charge of the post of Chairman, Antrix. A senior scientist of ISRO had been appointed as full-time Chairman-cum - Managing Director of Antrix and had taken over charge on 7 July 2011.

### 4.3.2 The disparate roles of Director (Contract Management and Legal Services)

In March 2009, the work of finalisation of INSAT contracts was transferred to Antrix. Here is a graphic representation of the multiple roles performed by a single official:


The Antrix-Devas agreement was a case where an employee of one organization, i.e. DoS, responsible for the preparation, negotiation, management and enforcement of a contract, also participated in the management of the same contract as a representative of *another* entity, Antrix. This is a clear indicator that control activities had weakened to such an extent that there was no clear segregation of roles. This would have also prevented validation and objective assessment of the contract from taking place.

DoS informed Audit in August 2011 that this position had been changed and different officers were handling contracts in DoS, ISRO and Antrix.

### 4.3.3 Shri A. Bhaskaranarayana's role

The Scientific Secretary is the top technical bureaucrat in ISRO after the Chairman, ISRO. All programme offices functioning at ISRO (HQ.) report to the Chairman, ISRO through him. He is the Head of the Department for ISRO and, in this role, performs both administrative and technical functions.

Similarly, the post of the Programme Director of SCNPO is also a critical position mandated to service ICC. According to this mandate, the Programme Director of SCNPO reports to Chairman, ISRO and carries out major technical activities such as transponder allocation, finalisation of INSAT contracts, frequency management and coordination of orbital slots with ITU.

Sh. A. Bhaskaranarayana was Director, SCNPO from October 2002 to July 2008. He first held the post up to the age of 60 years till July 2004. Thereafter, he was granted two extensions up to the age of 64 (that is up to July 2008). Sh. A. Bhaskaranarayana retired on superannuation with effect from 31 July 2008.

Chairman/ ISRO and Secretary, DOS, Dr. G. Madhavan Nair, directed Sh. A. Bhaskaranarayana to hold the additional charge of Scientific Secretary from August 2007, which was continued until his superannuation in July 2008.

Sh. A. Bhaskaranarayana was awarded the Dr. Vikram Sarabhai Distinguished Professorship with effect from August 2008 for a period of two years. It must be borne in mind that Secretary, DOS, Dr. G. Madhavan Nair asked Sh. A. Bhaskaranarayana, a retired official, to hold the charge of Scientific Secretary (i.e. the Head of the Department for ISRO) and Director, SCNPO with effect from August 2008, during his professorship, which he continued to hold till December 2009.


This retired official was, therefore, allowed to perform administrative functions of DoS from a sinecure position which normally senior scientists use for conducting higher research after retirement.

A transparent, objective and documented system was not in place to carry out functions such as allocation of transponders, finalisation of INSAT contracts and frequency management. Critical decisions were being made by only two or three officers of DoS/ ISRO. The multiple responsibilities of the officials belonging to ISRO and working in both ISRO and Antrix resulted in conflict of interest. In the present case, their decision-making proved disadvantageous to their parent organisation, DoS.

Grant of extension to or re-employment of superannuated officers is a matter within the remit of the Department of Personnel and Training (DoPT) as per the Allocation of Business Rules, 1961. In view of the dubious role played by the retired officials in the Devas-Antrix saga, it is incumbent that the existing guidelines with regard to re-employment/extension of retiring personnel, including those relating to the Professorship scheme, is suitably reviewed, for which the Department of Personnel & Training may be consulted.

DoS stated in August 2011 that this position had been changed and there were different officers functioning as Scientific Secretary and Director, SCNPO.

The Ministry of Home Affairs stated (February 2011) that the fact that Secretary DoS was also Chairman ISRO, Chairman of Space Commission, and Chairman, Antrix left scope for a conflict of interest situation.

The Ministry, in their communication, also observed that ***"there is no doubt that there has been collusive behaviour between some employees of ISRO and its affiliated organisations and Devas. The persons who set up Devas are also reportedly ex-employees of ISRO."***

### 4.4 How ISRO officials abetted Devas

The Antrix-Devas agreement did not envision a specific role for ISRO towards the development of the Devas ground segment. Dr. G. Madhavan Nair (Secretary, DoS), however, permitted (April 2009) Sh. A. Bhaskaranarayana, to lead a team to USA for technical review of the entire ground and user segment of Devas.

A copy of the letter is at Annexure-5. The review meetings were to encompass the Devas hybrid satellite terrestrial system configuration, review of available Mobile Satellite Services and Ancillary Terrestrial Component technologies for the same, review of consumer handset waveform choices and technical reviews of handset designs with potential chipset suppliers.

The team also proposed to meet the international investors of Devas such as Deutsch Telecom and Telecom Ventures during the tour. The approved tour programme indicated that Devas would be meeting all the travel expenses in connection with this tour.

**Interestingly, no top official in DoS seemed to find any conflict of interest in a client paying for the expenses of a public official for a trip which was in connection with the solicitation of private business.**

On another occasion, the CEO & President of Devas thanked Secretary, DoS in August 2009 for the encouragement, guidance and support extended by him and ISRO, in evolving the Devas system since its inception. A copy of the letter is placed at Annexure-6. He indicated to the Chairman, ISRO that over the past one year, Devas had made significant progress on

the technology front and towards finalising the system configuration and services. There were no records to show whether any assessment of whether Devas Multimedia Limited had the technology to deliver the services promised, was done before signing the agreement.

**In a letter of August 2009, the CEO and President of Devas Multimedia Private Limited named Dr. A. Bhaskaranarayana as being 'instrumental in a more focused definition of the Devas system, architecture, technology platform, handset/ terminals, and services'.**

DoS stated (August 2011) that it was in agreement with the facts.

### 4.5 Other acts of commission

Public officials are expected to use their powers and resources in accordance with prevailing laws and public policies. The instances listed below indicate serious issues of integrity.

#### 4.5.1 Failing to circulate minutes of Dr. Shankara Committee

As stated earlier, Chairman ISRO/ Antrix Board/ ICC and Secretary DoS, Dr. G. Madhavan Nair constituted the Dr. Shankara Committee in May 2004, to examine the joint venture proposal from M/s Forge Advisors, its technical feasibility, risk management, financial and market aspects as well as, time schedule and organisational aspects. The Committee submitted its report in January 2005, recommending signing of a transponder lease agreement between DoS/ISRO/Antrix and Devas. The Committee also recommended that in case Devas were to back out, the satellite could be effectively used for S-DMB services.

The MD, Antrix, in his letter addressed to the Additional Secretary, DoS in June 2010, indicated that the contractual terms of the Antrix-Devas agreement had been reviewed by a committee set up by the Chairman, Antrix/ ISRO, consisting of senior officers of ISRO/ DoS, including the Joint Secretary, DoS. It was also indicated that the Director, Contract Management and Legal Services of ISRO was involved in the negotiations of the contractual / legal terms and the whole agreement was vetted by him.

Although the Joint Secretary, DoS was a member of the committee, there was no proof that the minutes of the meeting had been forwarded to him.

DoS stated in August 2011 that it agreed with these facts.

### 4.5.2 Alteration of minutes of TAG to oblige Devas

The experimental plan of Devas came up for discussion in the 129th meeting of Technical Advisory Group (TAG) held on 26 December 2008, and in the meeting of the TAG Sub-Committee on the Devas Experimental Plan on 6 January 2009. Besides officials from DoS, senior officers of DoT and WPC attended the meetings.

The following issues emerged in the meetings:

- Devas was directed to submit technical details of its experimental plan.
- Devas was also asked to submit a list of all the services which would be provided through its experimental plan.
- TAG opined that the introduction of new technologies should be validated within the INSAT system.

However, Audit observed that in a letter dated 04 November 2009, DDG (DS) from DoT informed DoS that the minutes "do not reflect the deliberations held during the meeting". This position was also reiterated by DDG (Network Operations Control Centre) DoT on 06 November 2009. In both letters, it was highlighted that:

(i) Devas would have to submit an application for its proposed experimental plan to the apex Committee (that is, TAG) and apply for license for spectrum to WPC;

(ii) DoS (and not Devas) would conduct experiments if the satellite media-based technology was to be validated;

(iii) DoS would obtain necessary permission from WPC for terrestrial permission in the S-band.

The fact that the WPC representative had stated in the meeting of December 2008 that license for terrestrial transmission was not permitted in the S-band, was omitted from the minutes. Audit observed that notwithstanding these deliberations in the TAG meetings, DoT/WPC allowed Devas (and not DoS/ISRO) to carry out these experiments from January to September 2009.

The Joint Secretary of DoS, while confirming this position, observed (June 2010) that *"A clear attempt was made to mislead TAG by tampering with the minutes and the fact that the*

*Wireless Planning Advisor had mentioned in the TAG, that Terrestrial Transmission in S-Band not permitted was overlooked".* The minutes of the TAG meeting eventually circulated, gave the impression that Devas services had been approved by TAG, which was not a true reflection of the decision taken.

DoS stated in August 2011 that it was in agreement with these facts.

### 4.6 Current status of action taken by the Government

The Government of India constituted a High Level Team (HLT) on 31 May 2011 under the Chairmanship of Shri Pratyush Sinha, former Chief Vigilance Commissioner, to examine the entire gamut of the decision-making process followed in signing of the Antrix-Devas agreement. The HLT, in its report dated 2 September 2011 observed serious administrative and procedural lapses. It held Dr. G. Madhavan Nair, Shri A. Bhaskaranarayana, Shri K.R. Sridharamurthi and Dr. K N Shankara, all superannuated officers, responsible for various acts of commission and recommended that action may be taken against them under the relevant provisions of law. The HLT also found Shri S.S. Meenakshisundaram, Smt. Veena S Rao, Shri G. Balachandhran and Dr R. G. Nadadur responsible for acts of omission and recommended that appropriate action be taken against them under the relevant rules.

In January 2012, DoS furnished the status of action taken with regard to the Antrix-Devas agreement. The key institutional changes made/proposed included:

(a) Appointment of a full-time Chairman-cum-Managing Director of Antrix with effect from 7 July 2011.

(b) Meetings of the Space Commission to be convened at least once every quarter.

(c) Establishment of a Standing Project Appraisal Committee in October 2011, chaired by Secretary, DoS. This Committee would service the Space Commission.

(d) Reconstitution of the INSAT Coordination Committee (ICC).

(e) Appointment of a Director-level functionary for costing of INSAT / GSAT transponders.

(f) Restructuring of the existing SCNPO at ISRO Headquarters into three separate wings dealing with (i) frequency management (ii) SATCOM policy implementation and (iii) the Satellite Communication Programme.

While the actions taken or proposed to be taken by DoS do make certain institutional changes, the key issue of concentration of different roles and responsibilities in one individual viz. Secretary, DoS has only been marginally addressed. This has been done to the extent of divestment of his position as Chairman, Antrix Corporation Limited. The governance issues, in terms of segregation of responsibilities to ensure risk mitigation, in our view, deserves further attention of the Government, particularly in the context of the dysfunctional checks and balances.

The Action Taken Report furnished by DoS indicates that Dr. G. Madhavan Nair, former Secretary, Department of Space and three other retired senior scientists of ISRO, viz., Shri A. Bhaskaranarayana, Shri K R Sridharamurthi and Dr. K N Shankara have been excluded for re-employment, role in any committee or any other important role in the Government. These officials have also been divested of any current assignment / consultancy.

# Chapter 5 Conclusions

The report on the hybrid satellite digital multimedia broadcasting service agreement with Devas is a classic case of public investment for private profit. The Department of Space, in its eagerness, went beyond its remit as laid down in the Allocation of Business Rules, concealed facts from the Union Cabinet and violated numerous rules, policies and procedures. Public interest and those of the Government were sacrificed to favour a private consultancy firm which was promoted by Sh. D. Venugopal and Sh. M.G. Chandrashekhar, retired employees of ISRO.

The breach of existing rules, policies and procedures finds resonance throughout the Report. The Department of Space took upon itself the task of approving the new hybrid S-DMB service which as in the case of DTH services, was the prerogative of the Union Cabinet. Valuable spectrum frequencies, including 10 MHz were to be reserved for strategic purpose, were earmarked for Devas without obtaining approval of the Wireless Planning and Coordination (WPC) wing of DoT.

The Department of Space, while seeking approval of the Union Cabinet for the launch of the GSAT-6 satellite in November 2005, suppressed the crucial fact that it had signed an agreement with only one user i.e., Devas and not with different users as mentioned in the Cabinet note. The agreement with Devas was, in fact, signed well in advance of seeking approval of the Cabinet (January 2005). The Department of Space also failed to inform the Cabinet that GSAT-6 and 6A satellites, proposed to be funded by the Government budget, were almost entirely (only 10 *per cent* was set apart) to be used by the private commercial entity. Further, to avoid the obtaining of approval of the Union Cabinet, DoS estimated the cost of GSAT–6A, the subsequent satellite of a similar configuration after GSAT– 6 at ₹ 147 crore so that it fell within the financial competence of the Space Commission. The first satellite GSAT- 6, had been costed at ₹ 269 crore.

To promote the interest of the private consultancy firm, M/s. Forge Advisors, USA, the Department of Space extended to it a host of benefits. Seventy MHz of S-band spectrum was earmarked for an indefinite period to Devas ignoring its revenue potential to the Government. Subsequent events like the auction of 3G in which the Government received ₹67,719 crore and auction of Broadband Wireless Access where Government received ₹38,543 crore revealed that the possibility of obtaining commensurate amounts for

providing this commercial service was never explored. The special treatment accorded to Devas is also reflected in the fact that in the case of Devas, DoS decided to use the country-specific scarce orbital slot at 83° East, for two co-located satellites, to be used exclusively by the private customer.

The Antrix - Devas agreement cherry-picked from two different models[15] in a way that extended maximum benefits to Devas. DoS further went on to even revise the contract to 'reassure the investors' so that even before engaging in any trading, manufacturing, ground segment development activity and rolling out of any services, it could raise an amount of ₹ 575.76 crore from foreign investors.

There is an expectation that the Government should deliver a high standard of integrity in the civil services, public institutions and public services. There is a need to recognise and deal with conflict of interest issues so that the fundamental integrity of decisions, departments and the Government is not undermined. This conflict is evident in the multiple roles exercised by Dr. G. Madhavan Nair. As Chairman ISRO, he appointed the Shankara Committee to examine the proposals of M/s. Forge Advisors. As Secretary, Department of Space, he submitted a note to the Union Cabinet in which critical facts were concealed. As Chairman, Space Commission, he chaired meetings where approval to GSAT– 6 and 6A satellites were accorded. He failed to convene INSAT Coordination Committee meetings as its Chairman, as a result of which, concerns of key stakeholders, represented through respective Secretaries of Ministries/Departments, were effectively blocked off in the decision-making process.

Thus, having the same person holding multiple posts of Chairman ICC, Chairman Space Commission, Secretary DoS, Chairman ISRO and Chairman-cum-Managing Director, Antrix clearly led to a conflict of interest. Since the damage that this could do has been very clearly brought out, among others, by the High-Powered Review Committee, it is evident that the Government would have to ensure that the same person does not hold all the crucial posts and different functionaries are appointed to ensure checks and balances.

The Antrix-Devas deal is a classic instance of failure of the governance structure in which selected individuals, some serving and some retired public servants, were able to successfully propel the agenda of a private entity by arrogating unto themselves, powers

[15] Customer specific satellite agreements and transponder lease agreements

which they were not legitimately authorized to exercise. In the parliamentary system of Government, the Cabinet has a role of centrality in the exercise of executive power. The fact that a group of individuals was able to conceal facts and side-step the Cabinet is a testimony of the extent of abuse of the trust reposed in them. This needs to be addressed.

Geetali Tare

*(GEETALI TARE)*
*Principal Director of Audit,*
*Scientific Departments*

*New Delhi*
*Dated: 30 - 04 - 2012*

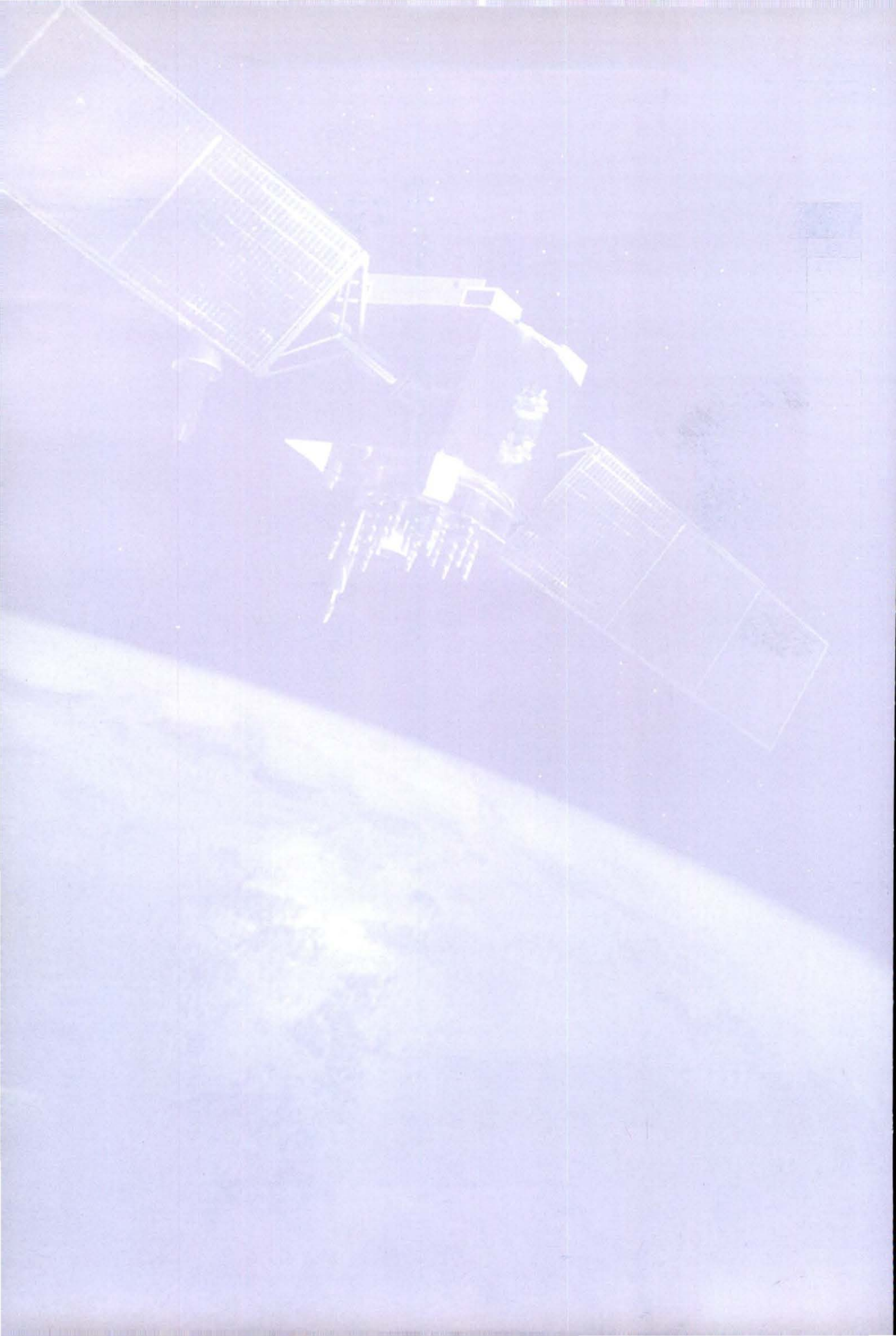
*Countersigned*

Vinod Rai

*(VINOD RAI)*
*Comptroller and Auditor General of India*

*New Delhi*
*Dated: 01 - 05 - 2012*

# ANNEXURES



## Annexure 1 : Share holding pattern of Devas Multimedia Limited, Bangalore (Refer Paragraph 3.5)

| No | Particulars | Status of the investor | At time of incorporation | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | Total |
|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| 1 | D.Venugopal s/o D.V.Prasad | Ex. ISRO official | 9000 | | 622 | | | | 9622 |
| 2 | Umesh M s/o K.Venkatramanayya | Ex. ISRO official/LDC | 1000 | | -733 | | | | 267 |
| 3 | CC/ Devas Mauritus Ltd | Foreign Investor | 0 | | 18847 | 11978 | | 525 | 31350 |
| 4 | Telecom Devas Mauritius | Foreign Investor | | | 18847 | 11978 | | 525 | 31350 |
| 5 | Deutsche Telekom Asia Pvt Ltd | Foreign Investor | | | | | 28349 | 8400 | 36749 |
| 6 | M.G.Chandrasekhar | Ex. ISRO official | | 9623 | | 29000 | -3400 | | 35223 |
| 7 | Ramchadran Viswanathan | Employee of M/s Forge Advisors | | 9623 | | | | | 9623 |
| 8 | Paresh Shah | Employee of M/s Forge Advisors | | 9622 | | | | | 9622 |
| 9 | James Fox | Employee of M/s Forge Advisors | | | 4179 | | | | 4179 |
| 10 | D Natraj | Ex. World Space employee | | 267 | | | | | 267 |
| 11 | Abhishek Jain | Employee of M/s Forge Advisors | | 267 | | | | | 267 |
| 12 | Clarence Irving | Employee of M/s Forge Advisors | | 267 | | | | | 267 |
| 13 | Amirali Hudda | Employee of M/s Forge Advisors | | 533 | | | | | 533 |
| 14 | Garry M Parson | Columbia Capital employee | | | | 798 | | | 798 |
| 15 | Lawrence Babbio Junior | Telecom Devas employee | | | | 798 | | | 798 |
| 16 | Devas Employee Mauritius Ltd | Mauritius limited company | | | | | | 4511 | 4511 |
| 17 | Murugappan A. | Ex. Defence personnel | | | | | 6400 | | 6400 |
| 18 | Miscellaneous transfer | | | -2 | | | | | -2 |
| 19 | Total in Columns (10) | | | | | | | | 181824 |

Source: Return of allotment, list of allottees furnished by Devas to Registrar of Companies, Karnataka, Bangalore

## Annexure 2: Comparison of Antrix- Devas contract with other transponder lease agreements (Refer Paragraph 3.8)

| Terms of Devas Transponder lease agreement | Corresponding terms of other transponder lease agreement | Advantages to Devas |
|---|---|---|
| **The leased capacities:** Entire capacity of digital multimedia mobile satellite was leased to one company. There was no clause disallowing sub-leasing. | Various types of transponders applicable to TV/ DTH/ DSNG/ VSAT services were allotted to different customers specifically disallowing any sub-leasing. | Allocation of satellite capacity exclusively to Devas was against the principle of "non-exclusive allocation" of satellite capacity by ICC. |
| **Period of lease and terms and conditions:** Period of lease provided in the Devas contract was for the entire expected life of two satellites (PS1 and PS2) for 12 years.<br>The second satellite was to be launched as a follow-on satellite to the first one. Additional capacity was to be provided based on a 3 year notice subject to entering into fresh lease and regulatory approvals. | Period of lease was a definite lease period ranging from one to 10 years. The lease amount had a relationship with the time for which it is leased.<br>Only part capacity of a satellite was being leased to a customer, not the entire satellite. | This clause was again an open-ended one to benefit Devas. The scarce and valuable 70 MHz S-Band space spectrum and 83° East orbital slot was earmarked for an indefinite period to Devas without any financial consideration. |
| **Insurance**: Clause d of Article 3 contained the following terms and conditions:<br>PS1: insurance (including in orbit insurance) was to be borne by Antrix and re-launch guarantee for PS1 in case it failed.<br>PS2: Devas was to insure both launch and in-orbit insurance. If PS1 launch successful, PS2 re-launch was guaranteed by Antrix.<br>If two out of ten transponders failed continuously it would be treated as a total satellite failure. | Terms of other transponder lease contract only addressed the extent of transponders leased. Other transponder lease contracts did not provide for re-launch guarantee because the entire satellite was not being leased to the customer.<br>Other contracts were silent on the matter of insuring risks of failure. Article 1 only specified that DoS would use best efforts to provide capacity on an alternate satellite in the event of a technical contingency. | According to the terms of contract stipulated in GFR, terms of the contract were to be precise , definite and should not involve an uncertain and indefinite liability. Audit however observed that under this clause there were many conditional clauses passing on the risks to the credit of Antrix and benefits to the credit of Devas.<br>The risk of a satellite failure or a launch failure was resting with Antrix without any financial consideration, even though it was only leasing the transponders and was not associated with the business itself. |
| **Approvals**: Devas contract, provided that all necessary Governmental regulatory approvals, operating licenses from various Ministries via satellite and terrestrial networks were to be | According to SATCOM policy, the Indian satellites are owned by DoS and orbital slot allotment was to be obtained from ITU by DoS through WPC wing of DoT. | The clause in the contract that regulatory approval would be arranged by Antrix and were against stipulation of SATCOM policy. Further, Devas service is a new Devas service and regulations/ guidelines on this service |

| | | |
|---|---|---|
| arranged by Antrix and payable by Devas. | Other regulatory approvals such as spectrum allocation from WPC, operating licence for terrestrial operations from DoT, operating licence for broadcasting operations from MIB were to be obtained by the service-provider following regulations/ laws in force. | yet to be framed. Therefore, obtaining regulatory approvals for this services especially utilising scarce S-Band spectrum would have posed a challenge. In Devas contract, Antrix offered to arrange all these regulatory approvals free of cost to a private company. |
| **Monitoring**: Clause g&h of Article 3 of Devas contract provided that Antrix was to provide Devas an opportunity to review progress reports, major milestones, delays, criticality, etc. Antrix installation would exhibit technological visibilities and allow Devas representatives to Antrix facilities, provide project office space for 3 to 5 Devas employees. The cost would be borne by Devas. | Such terms were not found in other contracts. | DoS allowed Devas greater involvement in each stage of design and development of the satellite, indicating that the satellite was tailor-made for the needs of Devas, a dispensation exclusive to it. |
| **Charges:**<br><br>Devas contract provided that the contract for customer-specific satellite provided for annual lease charges of US $ 9 million per year and a capacity upfront reservation charges of US $ 20 million payable in three installments during the development and realisation phase of the satellite.<br><br>The payments were to be made at the rate of ₹43.78 per one US dollar irrespective of fluctuation in dollar rates.<br><br>Thus effectively, Devas were to make a payment of ₹560.38 crore per satellite. | In other transponder lease agreements, the general terms of payments were: (i) payment for lease charges and (ii) reservation fee of 25 per cent of annual lease charges adjustable at the end of the lease period.<br><br>Some lease agreements had in-built clauses for a percentage increase in lease charges with the ultimate year being charged at markets rates adjusted to inflation. In other cases, the clause relating to market conditions was absent, however, all amounts were payable in advance. | Transponder lease agreements generally provided for a five percent increase in the annual lease charges for the contracts whose lease period is more than one year. Such terms, beneficial to the interest of Government was missing which were not available in Devas contract.<br><br>In GSAT-6 and 6A satellites, the entire investment on the satellite of ₹1707.50 crore should have been recovered in two satellites, instead contract provided for recovery of ₹1120.76 crore for two satellites in three installments. Instead of ₹7.11 crore per unit chargeable only ₹4.67 crore per transponder year was charged.<br><br>On the one hand, the charges were subsidised, on the other hand, annual increase applicable to transponder lease agreements were also not charged extending double advantage to Devas. |

| | | |
|---|---|---|
| **Terms of payment:**<br>Devas were to pay a lease charges at the rate of US $ 11.5 million per year against US $ 9 million once it became cash flow positive.<br>Further, Devas were to make all payments in Indian rupees, and amounts listed in US dollars were to be paid in the equivalent Indian rupees at prevalent exchange rates on the date of signing the agreement. This worked out to ₹43.78 per US dollar. | Transponder lease agreements had only rupee terms.<br>Terms of payment were not co-related to the cash-flow situation of the customer. Instead, only specific amounts to be paid annually by customers were exhibited in the contracts. | In normal transponder lease contracts, a provision for annual increase of five percent was provided, Devas contract however provided for an increase only when it was cash-flow positive. |
| **Interruption in the provisions of leased capacity:**<br>Devas contract provided that it would be eligible for one day (24 hours discount) discount in its lease fees for an interruption of more than four hours in a month.<br>If four such interruptions occur continuously for three successive months, then the satellite is declared as a total satellite failure.<br>Half an hour failure eight times in a month would also be declared as total satellite failure. | Terms of other transponder lease contracts provided that there was no credit for less than one hour duration.<br>In cases of more than one hour interruptions, discounts were to be provided proportionately. | The clauses relating to interruptions extended a subsidy to Devas in case of interruptions, instead of the routine one-hour discount offered to other customers.<br>Further, eight half-hour failures per month, or four interruptions (of 4-hour duration each) for three successive months, would be declared as total satellite failure.<br>Antrix-Devas agreement provides for a discount on transponder lease fee ranging from ₹4.67 crore (being 10 per cent of annual transponder lease charges) to ₹14.01 crore (being 30 per cent of annual transponder lease charges) annually depending on the type of transponders failed. |
| **Termination of contract:** Devas contract provided that due to problems in regulatory approvals, Devas could terminate contract on or before Pre Shipment Review. In that case, Devas would forfeit upfront reservation fee/ charges.<br>If Antrix were to breach any provision of the agreement on three months notice from Devas, it was to immediately reimburse all the fees. | Other transponder lease contracts provide for termination of the contract on 3 months' prior notice on either side and regulatory approvals were the responsibility of the customer. | Therefore termination of the contract at Antrix/DoS's convenience, or in case Antrix /DoS was at fault, imposed a liability on Antrix /DoS to return the capacity upfront fees to Devas.<br>However, the fact not spelled out in the contract was that the investment in the realisation of the satellite was the liability of Antrix /DoS. |

| | | |
|---|---|---|
| If Antrix fails to get orbital slot and frequency spectrum on or before pre-shipment they were to refund the received amount to Devas without any compensation/ damage. In case of two successive launch failure of PS1, Antrix will refund upfront reservation fee of PS1. | | |
| **Payment:**<br>Devas contract provided for advanced quarterly licence fee which were to be paid within 30 days from the date of receipt of invoice. Interest was payable for the delayed payment beyond 30 days from the date payment is due. | The general terms of payment adopted in transponder lease contracts were all sums were payable by the customer when due and payable before the first day of every quarterly period in advance. Non-submission or late submission of invoice would not absolve customer from the liabilities to pay. Interest was payable for the delayed payment. | Penalty for delayed payment of licence fee was payable by other customers even if invoice was delayed by DoS, in case of Devas, a time of 30 days was allowed for payment from the date of receipt of invoice by Devas without any penalty. |
| **Board Participation:** Devas was to offer Antrix the option to appoint its senior officer to the Board of Devas. The officer so appointed was to act as an observer and not have any voting rights. | Other transponder lease contracts did not contain such clause. | The provision in Devas contract had the potential to create conflict of interest. Though Antrix-Devas agreement was a transponder lease agreement, the project was carried out in the form a collaborative project with representatives of ISRO on the Devas Board. This was apparently to create the confidence among the international investors of Devas and was advantageous to Devas. |
| **Representations and Warranties:** Antrix could offer another satellites to other parties:<br>- in due recognition of Devas seniority with prior intimation to Devas<br>- provided this did not infringe upon confidentiality agreements with Devas<br>- provided Devas schedules and deliverables were not affected. | Such terms were however not available in other transponder lease agreements. | The condition gave the needs of Devas primacy over other customers. In effect, this clause might have created a situation of "first among equals" for Devas. |

| | | |
|---|---|---|
| **Assignment:**<br><br>Devas may sub-licence, assign or sell all of its rights under this agreement without any approvals from Antrix. | Other customers who signed transponder lease contracts were not allowed to assign any of their rights or delegate any of their obligations without written consent of DoS. | This clause conferred a commercial advantage to Devas, which was not extended to other customers. |
| **Governing law:**<br><br>Devas contract provided that for the purpose of this agreement, rights and responsibilities of the parties hereunder were to be subject to and construed in accordance with the laws of India.<br><br>Arbitration proceedings were to be in accordance with International Chamber of Commerce, or UNCITRAL. | Other transponder lease agreements provided that any dispute or differences between the parties was to be settled by arbitration in accordance with the rules of Arbitration of the Indian Council of Arbitration and the Award made in pursuance thereof shall be binding on parties. | Arbitration clause of the contract therefore recognised Devas as an international customer though their registered address as per the contract was Bangalore.<br><br>International agreements binding on a department of Government of India (DoS) involving international customers, arbitration proceedings, etc., required under international law were to be cleared by legal cell of Department of Space and vetted by Ministry of Law. This was not done in the case of the contract under discussion. |
| **Liability of damage:**<br><br>Devas contract did not provide liability of damage instead provided for a compensation for delay<br><br>A penalty of US $ 416666 for every month subject to a penalty cap of five million dollars for a delay of 12 months was payable by Antrix to Devas for the delay in lease. | Normal transponder lease agreements entered by DoS provided for a clause on liability for damage. The clause provided that DoS would not be liable to pay for any direct or indirect or consequential loss or damage sustained by customer or any other person through the customer.<br><br>There was no penalty clause for the delay in lease. | Devas was singularly unique in that it was to be compensated for delay of one year lease, and for an amount as much as $ 5 million without approval of Ministry of Law. |

## Annexure-3: List of INSAT Contracts selected for detailed Audit (Refer Paragraph 3.8)

| No | Contract No date | Name of the Customer | Expiry Date | Contract period in years | Satellite | Launch date | Type of Bandwidth | Transponders | Current Bandwidth Used | Annual Contract Value (in crore | Unit cost in ₹ crore | Contract status | Type of service | Whether clause for increase in Transponder lease charges included in the agreement |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | INSAT-Lease-4A-11A-2008 dated 03/17/08 | Television Eighteen India Ltd, New Delhi | 04/30/11 | 3.00 | INSAT-4A | 12/22/05 | C-Band | 0.25 | 9 | 1.10 | 4.40 | CNS | TV | No |
| 2 | ANTX/203/ DEVAS/2005 dated 01/28/05 | DEVAS Multimedia (P) Ltd | | 12.00 each | GSAT-6 and 6A | NL | S,C-Band | 10 each | 70.00[16] | 46.70 | 4.67 | CNS | Multimedia | No |
| 3 | INSAT-Lease-4G-DTH-8- 2007 dated 10/30/07 | ETH Airtv Limited | 10/29/17 | 10.00 | INSAT-4G[17] | NL | Ku-Band | 6 | 216 | 28.40 | 4.80 | CNS | DTH | No |
| 4 | INSAT-Lease-3C-MSS-5-2008 dated 07/08/08 | Avantel Softech Limited | 07/07/13 | 5.00 | INSAT-3C | 01/24/02 | MSS TX | 600 terminals | 80 | 0.07 | 9 | RC | MSS | Yes |
| 5 | Insat/lease/4G/Ku Band/28/2009 dated 09/15/09 | Monica Broadcasting Private Limited | 10/31/12 | 3.00 | INSAT-3B/4G | 03/22/00 | Ku Band | 0.08 | 3 | 0.4074 | 4.8888 | CNS | DSNG | Yes |
| 6 | MOU dated 02/13/09 | Air Force Communication Centre-4CR | 01/31/12 | 3.00 | INSAT-4CR | 09/02/07 | Ku-Band | 0.375 | 13.5 | 2.143 | 5.71 | MOU | TV/ DSNG | Yes |
| 7 | MOU dated 02/13/09 | Air Force Communication Centre-4G | 01/31/12 | 3.00 | INSAT-4G | NL | Ku-Band | 2.25 | 81 | 12.86 | 5.72 | MOU | TV/ DSNG | Yes |
| 8 | MOU dated 12/31/08 | Directorate of System Applications | 11/16/11 | 3.00 | GSAT-2 | 05/08/03 | MSS TX | 0.46 | | 5.5709 | 12.102 | MOU | MSS | No |
| 9 | INSAT/Lease/4B/14/2009 dated 09/14/09 | Broadcast Equipment (India) Pvt Ltd | 02/28/13 | 3.42 | INSAT-4B | 03/12/07 | Nor C Band | 0.042 | 1.5 | 0.1466 | 3.5184 | CNS | DSNG | No |
| 10 | MOU dated 07/01/09 | Principal Director Naval Signals | 06/30/12 | 3.00 | GSAT-2 | 05/08/03 | MSS TX | 0.29 | | 3.4578 | 12.102 | RC | MSS | No |
| 11 | INSAT/Lease/4B/16/2010 dated 01/18/10 | MH One Tv Network ltd | 03/11/13 | 3.00 | INSAT-4B | 03/12/07 | Normal C Band | 0.167 | 6 | 1 | 5.7024 | CNS | TV | Yes |
| 12 | MOU dated 05/28/09 | Integrated Test Range, DRDO, Chandipur, Orrisa | 01/31/12 | 3.00 | INSAT-4G | NL | Ku Band | 0.5 | 18 | 2.59 | 5.184 | CNS | TV/ DSNG | No |

[16] Proposed to be utilised
[17] Launched in May 2011

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | ANTX/VSAT/INFINIUM/3B/20/2009 dated 06/22/09 | Infinium (India) Limited | 10/02/09 | 0.25 | INSAT-3B | 03/22/00 | Ku Band | 0.069 | 2.5 | | | CNS | VSAT | |
| 14 | INSAT-Lease-4A-31-2005 dated 11/21/05 | Dish Tv India Limited | 11/20/08 | 3.00 | INSAT-4A | 12/22/05 | C Band | 0.625 | 22.5 | 2.75 | 4.4 | CNS | TV | No |
| 15 | Agreement dated 08/01/09 | Dept.of Info & Bio Technology, Chattisgarh (CHIPS) | 03/31/11 | 2.00 | INSAT-4CR | 09/02/07 | Ku Band | 0.11 | 4 | 0.635 | 5.72 | MOU | VSAT | Yes |
| 16 | MOU dated 10/01/09 | Programme 'AD'(PGAD), DRDO-Hyderabad | 09/30/12 | 3.00 | INSAT-4A | 12/22/05 | C Band | 0.125 | 4.5 | 0.6944 | 5.5548 | MOU | VSAT | Yes |
| 17 | MOU dated 08/04/08 | Additional Dte Gen of Signal Intl-Proj Samudra | 08/03/11 | 3.00 | INSAT-3E | 09/28/03 | C Band | 0.11 | 3 | 0.2825 | 3.39 | MOU | VSAT | No |
| 18 | INSAT-Lease-4C-5-2006 dated 02/06/06 | Sun TV Limited, Chennai | 02/05/11 | 5.00 | 4CR/Measat-3 | 09/02/07 | Ku-Band | 1 | 36 | 4.80 | 4.8 | RC | TV/ DSNG | No |
| 19 | INSAT-Lease-3B-DSNG-3A-2009 dated 05/12/09 | Dish TV India Limited | 03/31/12 | 3.08 | INSAT-3B/4G | 03/22/00 | Ku Band | 0.375 | 13.5 | 1.59 | 4.2347 | RC | DSNG | Yes |
| 20 | INSAT-Lease-4A-DTH-5-2005 dated 02/19/05 | Sun Direct TV Private Ltd, Chennai | 02/18/10 | 5.00 | INSAT-4B | 03/12/07 | Ku Band | 6 | 216 | 28.20 | 4.70 | RC | DTH | No |
| 21 | INSAT-Lease-DSNG-3B-3-2004 dated 03/12/04 | Dish Tv India Limited | 03/31/05 | 1.00 | INSAT-3B | 03/22/00 | Ku Band | 0.375 | 13.5 | 1.44 | 3.84 | RC | DSNG | Yes |
| 22 | INSAT-Lease-MCPC-4A-25-2005 dated 06/04/05 | Essel Shyam Communication Ltd | 10/31/08 | 3.00 | INSAT-4A | 12/22/05 | C Band | 1 | 36 | 4.00 | 4.00 | RC | TV | No |
| 23 | INSAT-4A-DTH-1-2005 dated 11/12/05 | Space TV Limited/Tata Sky Limited | 11/11/15 | 10.00 | INSAT-4A | 12/22/05 | Ku Band | 12 | 432 | 55.20 | 4.60 | RC | DTH | No |
| 24 | INSAT-Lease-4A-2-2003 dated 12/12/03 | Lamhas Communication Services Ltd | 09/30/09 | 5.75 | INSAT-4A | 12/22/05 | C Band | 4 | 18 | 14.00 | 3.50 | RC | TV/ DTH | No |
| 25 | INSAT-Lease-4B-[6]-2007 dated 04/10/07 | SUN TV Network Limited | 03/31/11 | 4.00 | INSAT-4B | 03/12/07 | C Band | 2 | 72 | 8.00 | 4.00 | RC | TV | No |
| 26 | INSAT-Lease-4G-DTH-1-2005 dated 06/28/05 | Reliance Big TV | 06/27/15 | 10.00 | INSAT-4B | 03/12/07 | Ku Band | 8 | 288 | 37.60 | 4.70 | RC | DTH | No |

CNS: Contract Not Started
RC: Running Contracts
MoU: Memorandum of Understandin

## Annexure-4

## Instances of disadvantages to DoS reported in previous Audit Reports (Refer Paragraph 4.3)

| Paragraph Number | Description of the paragraph | Action Taken Note of Department of Space and further comments. |
|---|---|---|
| **Paragraph 9.2 of Performance Audit Report No. 9 of 2008 of the Comptroller and Auditor General of India, Union Government (Commercial)** | Department of Space allowed 12 of its officers to work for Antrix Corporation Limited, the public sector undertaking of DoS. In addition to being the Chairman as well as the functional Directors and the non-functional Directors on the Board were all part-time. 12 top senior management officials of ANTRIX were also part-time ISRO officials. The multiple responsibilities of the officials of ISRO in ISRO and Antrix had resulted in conflict of interest. | **DoS replied that present practice of borrowing officers of ISRO is proposed to be continued till the manpower resources of the company are substantially strengthened. Once the manpower of the company is substantially strengthened, the company will put in place different authorities with well defined segregation of duties and responsibilities. ISRO officials therefore continued to discharge multiple responsibilities.** |
| **Paragraph 9.7.1.3 of Performance Audit Report No. 9 of 2008 of the Comptroller and Auditor General of India, Union Government (Commercial).** | The Company's interest earnings averaged around 50 per cent of the profit after tax during the years 2002-07 except 2003-04 which would suggest that the Company was being used as a special purpose vehicle for parking of un-utilised funds by the DoS/ ISRO. | **DoS replied that transfer of funds by DoS to the Company is with reference to specific MOUs for assigned tasks. Reply not acceptable since the company has received advance of ₹815 crore in respect of 9 contracts from Ministry Of Defence and India Metrological Department and an amount of ₹49 crore (March 2010) only has been debited towards deliveries. This clearly indicated that surplus funds are parked in the Company. Thus, Instead of Undertaking the work of other departments on deposit work basis, DoS parked these funds in Antrix.** |
| **Paragraph 5.7.2 of Compliance Audit Report No. 9 of 2006 of the Comptroller and Auditor General of India Union Government (Non Tax Receipts).** | Similarly, Antrix was allowed to deduct its commission charges from the revenues collected prior to remitting the entire amounts to DoS. This also resulted in lack of transparency in the payment of commission charges to Antrix as these amounts were not included in the budget of DoS.<br><br>Loss of interest due to delayed receipt of INSAT revenue from Antrix: While Antrix was expected to remit INSAT receipts to DoS at the end of every financial year, it was observed by audit that during the period from 2001-05, Antrix transferred revenue of ₹166.83 crore to DoS with | **DoS replied that Antrix is at present, remitting 85 per cent revenue share to DoS on quarterly basis. Department added that it issued instructions to Antrix to remit the entire revenue from transponder leasing collected on behalf of DoS to DoS and claim Antrix share of 15 per cent on a quarterly basis from DoS. It added that DoS is taking into account this expenditure while budgeting DoS/ ISRO Budget. DoS is however yet to issue instructions to Antrix to transfer other revenue realised by it from the sale of other** |

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| | a delay ranging from 5 months to 14 months after closure of accounts of the financial year. The delay in transfer of receipt resulted in loss of interest of ₹8.90 crore.<br><br>Antrix also retained an amount of ₹1.23 crore on account of penal interest for the years 2003-05 levied on behalf of DoS in various contracts, which should have been remitted to DoS. The department while accepting views of audit, stated in July 2006 that Antrix would henceforth remit revenues to DoS on quarterly basis. | **space services and products of ISRO such as revenue from IRS satellites, revenue from launch services, etc.) to DoS and provide commission charges to Antrix budgeting the same in DoS account as required under rule 6 of receipt and payment account rules.** |
| **Paragraph 5.7.3 of Compliance Audit Report No. 9 of 2006 of the Comptroller and Auditor General of India Union Government (Non Tax Receipts).** | In Antrix project undertaken by MCF based on an MOU, Antrix unilaterally increased its share without consulting MCF resulted in short-realisation of ₹2.40 crore. | **DoS replied that increased revenue share of Antrix has been done with the approval of DoS. Reply is not acceptable. DoS increased the revenue share of Antrix in this project with the contention that amount realised was more than that projected by MCF is not acceptable since the circular issued by DoS in June 2001 stipulated that project savings from Antrix projects were to be credited to departmental revenue head. Further, Antrix neither had any manufacturing activity nor any other related activity, which called for increased revenue share. DoS, therefore, is yet to recover its foregone revenue of ₹2.40 crore.** |
| **Paragraph 5.7.4 of Compliance Audit Report No. 9 of 2006 of the Comptroller and Auditor General of India Union Government (Non Tax Receipts).** | The portion of revenue retained for the IRS projects/ contracts was revised (December 2001) from 20 per cent to 60 percent for all components (data access fee, royalty and software) to be applicable from April 2002 onwards. The proposal of Antrix was approved by DoS in the note generated from Antrix. The justification for the sharp increase in the portion of revenue retained by Antrix was attributed to the requirement of Antrix to increase its earning to build up adequate resources. Antrix had neither any manufacturing nor any other related activity, which called for increased revenue share to Antrix. The decision reduced the revenues of DoS to the extent of ₹23.35 crore. | **DoS replied that the contention of the audit that the increased share of revenue is allowed to build up adequate resources is not in order. Reply is not acceptable. Note of Antrix of February 2002 approved by DoS justified the sharp increase in the portion of revenue retained by Antrix and attributed it to the requirement of Antrix to increase its earning to build up its adequate resources. The justification is not acceptable since there was no costing of over heads or any special services provided by Antrix to DoS which called for a revision of revenue share and increased share to Antrix.** |
| **Paragraph 6.3.2 of Performance Audit** | In two completed Antrix projects, Antrix did not remit balance dues of ₹1.85 crore to NRSC even | **DoS replied that NRSC is yet to receive clearance from Antrix in one case in the** |

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| **Report No. 21 of 2010-11 of the Comptroller and Auditor General of India, Union Government (Scientific Departments).** | after raising demands by NRSC. This also resulted in loss of potential interest of ₹48.15 lakh at eight *per cent* per annum, up to March 2009. | **second case, NRSC could complete the project with fifty per cent of the project money with support from Antrix. Reply of DoS is not acceptable since NRSC/DoS stated in September 2008/July 2009 that demands were since raised on Antrix at the instance of Audit.** |
| **Paragraph 8.5 of Performance Audit Report No. 21 of 2010-11 of the Comptroller and Auditor General of India, Union Government (Scientific Departments).** | NRSC sold remote sensing satellite data to foreign clients through Antrix. No MoU or agreement existed between NRSC and Antrix laying down specific responsibilities. The pricing sub-committee of NRSC had fixed (January 2008) the revenue share between NRSC and Antrix in the ratio of 50:50 for the sale of IRS data to foreign clients. Fifty percent commission charges to the commission agent (Antrix) was highly advantageous to Antrix. | **DoS justified the higher commission charges to Antrix by stating that the marketing expenses such as expenditure on international exhibitions, advertisement, travel, legal expenses, postages etc., are on the higher side. Reply is not acceptable.**<br><br>**Reply of DoS is not acceptable since Antrix sells the satellite data products to its international customers through its re-seller (M/s Space Imagery) by paying the sub agent commission of 15 *per cent.* Therefore, there was no additional effort on the part of Antrix for getting 35 *per cent* commission** |

## Annexure-5: Note of the Managing Director of ACL dated 14 April 2009 regarding Approval of tour programme of Shri A. Bhaskaranarayana (Refer Paragraph 4.4)

ANTRIX CORPORATION LIMITED
BANGALORE

Ref: Antx/04/Devas/2009 April 14, 2009

Sub: **Proposed tour programme of Shri A. Bhaskaranarayana to USA and UK for DEVAS Ground and User Segment System Review and other meetings with JPL, NASA, Kennedy Space Flight Centre, Solar Cell Research Institute etc., during May 01 2009 to June 02, 2009**

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Chairman, Antrix / Secretary, DOS may kindly recall that Shri A. Bhaskaranarayana, Director, SCPO / Scientific Secretary, ISRO has been requested by DEVAS for leading a detailed technical review of their entire Ground and User Segment at USA. The review meetings would encompass DEVAS Hybrid Satellite Terrestrial System Configuration, review of available MSS and ATC technologies for the same, review of the consumer handset waveform choices and technical reviews of handset designs with potential chipset suppliers. The reviews will include demonstration of similar satellite systems like ICO and also their planned services and system choices. These technical meetings and reviews are critical to the successful implementation of GSAT – 6 / DEVAS satellite programme.

Taking advantage of the above programme, Shri A. Bhaskaranarayana is also proposed to have meetings at JPL at Los Angeles, USA, Solar Cell Research Institute at Arkansas, Antenna Mount Suppliers at San Francisco and participation in the NSS Chandrayan Award Ceremony by ISDC / NASA at Kennedy Space Flight Centre, Orlando, US.

An itinerary based on the above meeting requirements with DEVAS, XM satellite radio, Sky Terra, Hughes, Electrorbit, Solar Cell Research Institute, NASA, Quelcom, ICO, Orbicom and Deutsch Telecom, Telecom ventures etc., are scheduled during May 01 to June 02, 2009 at Washington, Little Rock, LA, San Francisco, San Deigo, Las Vegas, Orlando and London.

DEVAS will be meeting all the travel expenses in connection with the above tour programme as per the existing arrangement with Antrix.

Chairman, ISRO / Antrix, Secretary, DOS may kindly approve the proposed tour programme.

(K.R. Sridhara Murthi)
Managing Director

Chairman, ISRO, Antrix &
Secretary, DOS

Agreed.

15/4.

## Annexure-6: A letter from Devas dated 7 August 2009 regarding Devas system update and review (Refer Paragraph 4.4)

DEVAS

**Devas Multimedia Private Limited**
Corporate Office: 2nd Floor, Prema Gardenia, #357/6, 1st Cross, I Block, Jayanagar, Bangalore 560 011, India
☎: +91-80-6651 1001 to 1003 🖷: +91-80-6651 1042 ✉ info@devasmedia.com

Registered office: 102, Eden Park, 20, Vittal Mallya Road, Bangalore 560 001, India

August 7, 2009

To: Dr. G. Madhavan Nair
Chairman, Indian Space Research Organisation &
Secretary, Department of Space

Dear Sir,

Subject: Devas System Update & Review

We are extremely thankful to you for the encouragement, guidance, and support extended by you and ISRO in evolving the Devas system since its inception.

We are happy to inform you that over the past one year we have made significant progress on the technology front and towards finalizing the system configuration and services. The detailed interactions that Dr. Bhaskaranarayana, Scientific Secretary and Director, Satcom Programmes, had with Devas, its technical partners, and several leading technology companies during the visit to USA in May 2009 has been instrumental in a more focused definition of the Devas system architecture, technology platform, handset/terminals, and services.

We kindly request a meeting with you along with Dr. Bhaskaranarayana and Dr. Sridhara Murthi in Bangalore during August to brief you and update you on the Devas Multimedia system and take your inputs to finalize both the commercial and technical platform for launch of services in 2010.

As you are aware, we are presently conducting technical field trials of the Devas hybrid satellite terrestrial system in Bangalore in association with ISRO, Deutsche Telekom and Alcatel Lucent. The trial encompasses multimedia and interactive data services to mobile phones, car receivers, and other terminals. We request you to kindly spare some of your valuable time to see and review the Devas technical trials.

We are also preparing our WPC operating license application for complementary ground segment network that we anticipate filing after the conclusion of the technical trials. The technical trials serve to confirm the appropriate operating parameters for the complementary ground segment network based on tests conducted.

Based on inputs from the Scientific Secretary to harmonize the Devas system with the latest trends in mobile and satellite communications, we have made progress in LTE (long term evolution) as the technology platform of choice for Devas system and the necessary steps towards implementing the same in a phased manner. In addition, we have made progress in outlining an extension of the current program to address MSS services using state of the art system configuration and technologies. We are also exploring filing for CASE license to serve as a private satellite operator in India enabling us to take the system to a firm footing for provision of different advanced services in the country.

We are also very happy to inform you that systems similar to Devas are being prepared in USA, Europe, China, and Middle East etc. Perhaps Devas may be first of its kind in the world to offer commercial services in 2010.

We look forward to meeting you at your kind convenience to brief you on the above.

Thanking you,

Yours faithfully

R. Viswanathan

Ramachandran Viswanathan
CEO & President

CC: Dr. A. Sivakaranarayana
Scientific Secretary and
Director, Satellite Communications Programmes
Indian Space Research Organisation

K. R. Sridhara Murthi
Managing Director
Antrix Corporation

## Glossary of Terms

| ACL | Antrix Corporation Limited |
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| ATC | Ancillary Terrestrial Component |
| BSS | Broadcast Satellite Service |
| BWA | Broadband Wireless Access |
| CCS | Cabinet Committee on Security |
| CMLS | Contract Management and Legal Services |
| Devas | Devas Multimedia Limited |
| DoS | Department of Space |
| DoT | Department of Telecommunication |
| DSNG | Digital Satellite News Gathering |
| DTH | Direct to Home |
| GSLV | Geo Synchronous Launch Vehicle |
| ICC | INSAT Coordination Committee |
| INSAT | Indian National Satellite System |
| INTELSAT | International Satellite Organisation |
| ISRO | Indian Space Research Organisation |
| ITU | International Telecommunication Union |
| MCF | Master Control Facility |
| MIB | Ministry of Information and Broadcasting |
| MoF | Ministry of Finance |
| MoU | Memorandum of Understanding |
| MSS | Mobile Satellite Service |
| NRSC | National Remote Sensing Centre |
| PSLV | Polar Satellite Launch Vehicle |
| SCNPO | Satellite Communication and Navigational Programme Office |
| SCPO | Satellite Communication Programme Office, erstwhile name of SCNPO |
| S-DMB | Satellite Digital Multimedia Broadcasting |
| TAG | Technical Advisory Group |
| TRAI | Telecom Regulatory Authority of India |
| VSAT | Very Small Aperture Terminal |
| WPC | Wireless Planning and Coordination |
| WRC | World Radio Conference |