

**DEPARTMENT OF SPACE****DEMAND NO.88****Department of Space**

A. The Budget allocations, net of recoveries, are given below:

		<i>(In crores of Rupees)</i>								
Major Head	Budget 2006-2007			Revised 2006-2007			Budget 2007-2008			
	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	
Revenue	2702.30	390.00	3092.30	2124.58	397.00	2521.58	1838.90	438.60	2277.50	
Capital	517.70	...	517.70	475.42	...	475.42	1581.10	...	1581.10	
<b>Total</b>	<b>3220.00</b>	<b>390.00</b>	<b>3610.00</b>	<b>2600.00</b>	<b>397.00</b>	<b>2997.00</b>	<b>3420.00</b>	<b>438.60</b>	<b>3858.60</b>	
1. Secretariat - Economic Services	3451	...	4.60	4.60	...	4.89	4.89	...	4.69	4.69
<b>Space Research</b>										
<b>Space Technology</b>										
<b>Launch Vehicle Technology</b>										
2. Geo -Synchronous Satellite Launch Vehicle	3402	11.30	...	11.30	7.10	...	7.10	9.00	...	9.00
3. GSLV MK-III Development	3402	291.48	...	291.48	196.87	...	196.87	231.00	...	231.00
	5402	125.96	...	125.96	128.13	...	128.13	104.00	...	104.00
	<i>Total</i>	<i>417.44</i>	...	<i>417.44</i>	<i>325.00</i>	...	<i>325.00</i>	<i>335.00</i>	...	<i>335.00</i>
4. Cryogenic Upper Stage (CUS) Project	3402	2.00	...	2.00	1.95	...	1.95	1.30	...	1.30
5. Polar Satellite Launch Vehicle - Continuation (PSLV-C) Project	3402	97.69	...	97.69	96.51	...	96.51	155.61	...	155.61
	5402	2.31	...	2.31	3.49	...	3.49	4.39	...	4.39
	<i>Total</i>	<i>100.00</i>	...	<i>100.00</i>	<i>100.00</i>	...	<i>100.00</i>	<i>160.00</i>	...	<i>160.00</i>
6. Vikram Sarabhai Space Centre (VSSC)	3402	125.95	111.17	237.12	111.16	113.11	224.27	134.02	116.24	250.26
	5402	92.65	...	92.65	58.46	...	58.46	101.94	...	101.94
	<i>Total</i>	<i>218.60</i>	<i>111.17</i>	<i>329.77</i>	<i>169.62</i>	<i>113.11</i>	<i>282.73</i>	<i>235.96</i>	<i>116.24</i>	<i>352.20</i>
7. Indian Space Research Organisation - Inertial Systems Unit(IISU)	3402	16.89	...	16.89	18.46	...	18.46	10.94	...	10.94
	5402	2.93	...	2.93	2.34	...	2.34	10.31	...	10.31
	<i>Total</i>	<i>19.82</i>	...	<i>19.82</i>	<i>20.80</i>	...	<i>20.80</i>	<i>21.25</i>	...	<i>21.25</i>
8. Liquid Propulsion Systems Centre	3402	101.52	44.36	145.88	90.03	44.04	134.07	150.41	46.37	196.78
	5402	8.57	...	8.57	9.17	...	9.17	21.17	...	21.17
	<i>Total</i>	<i>110.09</i>	<i>44.36</i>	<i>154.45</i>	<i>99.20</i>	<i>44.04</i>	<i>143.24</i>	<i>171.58</i>	<i>46.37</i>	<i>217.95</i>
9. GSLV Operational (Continuation) Project	3402	188.71	...	188.71	196.71	...	196.71	251.36	...	251.36
	5402	11.89	...	11.89	11.29	...	11.29	13.64	...	13.64
	<i>Total</i>	<i>200.60</i>	...	<i>200.60</i>	<i>208.00</i>	...	<i>208.00</i>	<i>265.00</i>	...	<i>265.00</i>
10. Space Capsule Recovery Experiment (SRE)	3402	11.38	...	11.38	11.48	...	11.48	9.45	...	9.45
	5402	0.10	...	0.10	...	...	...	...	...	...
	<i>Total</i>	<i>11.48</i>	...	<i>11.48</i>	<i>11.48</i>	...	<i>11.48</i>	<i>9.45</i>	...	<i>9.45</i>
11. Manned Mission Initiatives	3402	...	...	...	...	...	...	25.00	...	25.00
	5402	...	...	...	...	...	...	25.00	...	25.00
	<i>Total</i>	...	...	...	...	...	...	<i>50.00</i>	...	<i>50.00</i>
12. Indian Institute of Space Science & Technology	3402	...	...	...	...	...	...	10.00	...	10.00
	5402	...	...	...	...	...	...	65.00	...	65.00
	<i>Total</i>	...	...	...	...	...	...	<i>75.00</i>	...	<i>75.00</i>
13. Semi Cryogenic Engine/Stage Development	3402	...	...	...	...	...	...	10.00	...	10.00
	5402	...	...	...	...	...	...	15.00	...	15.00
	<i>Total</i>	...	...	...	...	...	...	<i>25.00</i>	...	<i>25.00</i>
<b>Total - Launch Vehicle Technology</b>		<b>1091.33</b>	<b>155.53</b>	<b>1246.86</b>	<b>943.15</b>	<b>157.15</b>	<b>1100.30</b>	<b>1358.54</b>	<b>162.61</b>	<b>1521.15</b>
<b>Setellite Technology</b>										
14. Cartosat-2	3402	1.49	...	1.49	1.38	...	1.38	0.15	...	0.15
15. Oceansat-2	3402	52.23	...	52.23	52.99	...	52.99	9.00	...	9.00
	5402	1.89	...	1.89	1.13	...	1.13	21.00	...	21.00
	<i>Total</i>	<i>54.12</i>	...	<i>54.12</i>	<i>54.12</i>	...	<i>54.12</i>	<i>30.00</i>	...	<i>30.00</i>
16. Resourcesat-2	3402	29.00	...	29.00	13.25	...	13.25	6.00	...	6.00
	5402	1.00	...	1.00	6.75	...	6.75	44.00	...	44.00
	<i>Total</i>	<i>30.00</i>	...	<i>30.00</i>	<i>20.00</i>	...	<i>20.00</i>	<i>50.00</i>	...	<i>50.00</i>

**No.88/ Department of Space**

		Budget 2006-2007			Revised 2006-2007			(In crores of Rupees) Budget 2007-2008			
Major Head		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	
17	ISRO Satellite Centre	3402	102.00	43.01	145.01	104.01	45.05	149.06	75.12	47.25	122.37
		5402	26.86	...	26.86	28.91	...	28.91	90.92	...	90.92
	<i>Total</i>		128.86	43.01	171.87	132.92	45.05	177.97	166.04	47.25	213.29
18.	Laboratory for Electro-Optics System(LEOS)	3402	10.90	...	10.90	12.54	...	12.54	11.67	...	11.67
		5402	1.44	...	1.44	9.95	...	9.95	9.54	...	9.54
	<i>Total</i>		12.34	...	12.34	22.49	...	22.49	21.21	...	21.21
19.	Radar Imaging Satellite-1(RISAT-1)	3402	71.76	...	71.76	39.60	...	39.60	12.00	...	12.00
		5402	22.09	...	22.09	10.40	...	10.40	44.00	...	44.00
	<i>Total</i>		93.85	...	93.85	50.00	...	50.00	56.00	...	56.00
20.	G.SAT-4	3402	9.90	...	9.90	13.70	...	13.70	7.34	...	7.34
		5402	0.10	...	0.10	1.30	...	1.30	0.66	...	0.66
	<i>Total</i>		10.00	...	10.00	15.00	...	15.00	8.00	...	8.00
21.	Navigational Satellite System	3402	429.99	...	429.99	0.10	...	0.10	15.00	...	15.00
		5402	10.01	...	10.01	0.10	...	0.10	86.00	...	86.00
	<i>Total</i>		440.00	...	440.00	0.20	...	0.20	101.00	...	101.00
22.	Semi Conductor Development	3402	25.00	...	25.00	27.50	...	27.50	36.12	...	36.12
		5402	...	...	...	...	...	...	5.00	...	5.00
	<i>Total</i>		25.00	...	25.00	27.50	...	27.50	41.12	...	41.12
23.	METSAT-2	3402	4.54	...	4.54	...	...	...	...	...	...
		5402	0.46	...	0.46	...	...	...	...	...	...
	<i>Total</i>		5.00	...	5.00	...	...	...	...	...	...
24.	Advanced Communication Satellite	3402	23.69	...	23.69	...	...	...	10.00	...	10.00
		5402	1.31	...	1.31	...	...	...	2.00	...	2.00
	<i>Total</i>		25.00	...	25.00	...	...	...	12.00	...	12.00
25.	Earth Observation - New Missions (Geo-HR,Altika-Argos)	3402	...	...	...	...	...	...	5.00	...	5.00
		5402	...	...	...	...	...	...	25.00	...	25.00
	<i>Total</i>		...	...	...	...	...	...	30.00	...	30.00
<b>Total - Satellite Technology</b>			<b>825.66</b>	<b>43.01</b>	<b>868.67</b>	<b>323.61</b>	<b>45.05</b>	<b>368.66</b>	<b>515.52</b>	<b>47.25</b>	<b>562.77</b>
<b>Launch Support, Tracking Network &amp; Range Facility</b>											
26.	Satish Dhawan Space Centre - SHAR	3402	68.03	52.64	120.67	80.58	53.17	133.75	69.15	55.51	124.66
		5402	32.74	...	32.74	41.60	...	41.60	74.28	...	74.28
	<i>Total</i>		100.77	52.64	153.41	122.18	53.17	175.35	143.43	55.51	198.94
27.	ISRO Telemetry, Tracking & Command Network (ISTRAC)	3402	16.56	14.27	30.83	21.37	13.36	34.73	22.15	15.04	37.19
		5402	25.14	...	25.14	44.74	...	44.74	26.16	...	26.16
	<i>Total</i>		41.70	14.27	55.97	66.11	13.36	79.47	48.31	15.04	63.35
28.	ISRO Radar Development Unit (ICRAD)	3402	1.69	...	1.69	2.54	...	2.54	4.32	...	4.32
		5402	0.17	...	0.17	0.17	...	0.17	0.17	...	0.17
	<i>Total</i>		1.86	...	1.86	2.71	...	2.71	4.49	...	4.49
<b>Total-Launch Support, Tracking Network &amp; Range Facility</b>			<b>144.33</b>	<b>66.91</b>	<b>211.24</b>	<b>191.00</b>	<b>66.53</b>	<b>257.53</b>	<b>196.23</b>	<b>70.55</b>	<b>266.78</b>
<b>Total-Space Technology</b>			<b>2061.32</b>	<b>265.45</b>	<b>2326.77</b>	<b>1457.76</b>	<b>268.73</b>	<b>1726.49</b>	<b>2070.29</b>	<b>280.41</b>	<b>2350.70</b>
<b>Space Applications</b>											
29.	Space Applications Centre	3402	68.67	53.24	121.91	64.58	52.17	116.75	57.39	54.11	111.50
		5402	6.24	...	6.24	9.39	...	9.39	37.64	...	37.64
	<i>Total</i>		74.91	53.24	128.15	73.97	52.17	126.14	95.03	54.11	149.14
30.	Development and Educational Communication Unit	3402	155.88	4.49	160.37	113.14	4.44	117.58	76.77	4.59	81.36
		5402	1.60	...	1.60	1.92	...	1.92	4.00	...	4.00
	<i>Total</i>		157.48	4.49	161.97	115.06	4.44	119.50	80.77	4.59	85.36
31.	National Natural Resources Management System	3402	54.00	...	54.00	52.12	...	52.12	53.97	...	53.97
32.	Earth Observation Application Mission(EOAM)	3402	8.68	...	8.68	6.94	...	6.94	3.97	...	3.97
33.	Regional Remote Sensing Service Centers(RRSSC)	3402	6.29	...	6.29	7.04	...	7.04	6.97	...	6.97
		5402	1.99	...	1.99	1.83	...	1.83	6.73	...	6.73
	<i>Total</i>		8.28	...	8.28	8.87	...	8.87	13.70	...	13.70
34.	National Remote Sensing Agency(NRSA)	3402	12.46	7.54	20.00	12.46	7.54	20.00	2.46	27.54	30.00

		(In crores of Rupees)									
Major Head		Budget 2006-2007			Revised 2006-2007			Budget 2007-2008			
		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	
35.	Disaster Management System	3402	23.35	...	23.35	25.07	...	25.07	40.00	...	40.00
		5402	1.00	...	1.00	1.40	...	1.40	30.00	...	30.00
	<i>Total</i>		24.35	...	24.35	26.47	...	26.47	70.00	...	70.00
36.	North Eastern Space Applications Centre	3402	3.00	...	3.00	3.00	...	3.00	4.35	0.65	5.00
<b>Total - Space Applications</b>			<b>343.16</b>	<b>65.27</b>	<b>408.43</b>	<b>298.89</b>	<b>64.15</b>	<b>363.04</b>	<b>324.25</b>	<b>86.89</b>	<b>411.14</b>
<b>Space Sciences</b>											
37.	Physical Research Laboratory(PRL)	3402	31.60	7.50	39.10	33.60	7.50	41.10	33.02	13.50	46.52
38.	National Atmospheric Research Laboratory(NARL) (Earlier - National MST Radar Facility)	3402	7.28	...	7.28	7.70	...	7.70	8.77	0.85	9.62
39.	RESPOND	3402	15.00	...	15.00	14.00	...	14.00	13.00	...	13.00
40.	Sensor Payload Development / Planetary Science Programme	3402	5.60	...	5.60	10.30	...	10.30	23.25	...	23.25
41.	Megha-tropiques	3402	28.40	...	28.40	14.95	...	14.95	8.00	...	8.00
		5402	0.10	...	0.10	0.05	...	0.05	12.00	...	12.00
	<i>Total</i>		28.50	...	28.50	15.00	...	15.00	20.00	...	20.00
42.	Astrosat	3402	45.99	...	45.99	27.40	...	27.40	5.00	...	5.00
		5402	10.46	...	10.46	8.40	...	8.40	35.00	...	35.00
	<i>Total</i>		56.45	...	56.45	35.80	...	35.80	40.00	...	40.00
43.	Indian Lunar Mission - Chandrayan - 1	3402	59.39	...	59.39	55.10	...	55.10	8.00	...	8.00
		5402	83.36	...	83.36	60.50	...	60.50	88.00	...	88.00
	<i>Total</i>		142.75	...	142.75	115.60	...	115.60	96.00	...	96.00
44.	ISRO Geosphere Biosphere Programme (ISRO GBP)	3402	7.68	...	7.68	8.05	...	8.05	25.32	...	25.32
45.	Atmospheric Science Program	3402	...	...	...	...	...	...	18.63	...	18.63
46.	Small Satellites for Atmospheric Studies	3402	...	...	...	...	...	...	2.00	...	2.00
47.	Other Schemes	3402	16.48	1.30	17.78	17.42	1.30	18.72	15.21	1.30	16.51
<b>Total - Space Sciences</b>			<b>311.34</b>	<b>8.80</b>	<b>320.14</b>	<b>257.47</b>	<b>8.80</b>	<b>266.27</b>	<b>295.20</b>	<b>15.65</b>	<b>310.85</b>
<b>Direction &amp; Administration / Other Programmes</b>											
48.	Special Indigenisation/Advance Ordering	3402	109.00	...	109.00	124.76	...	124.76	30.45	...	30.45
		5402	1.00	...	1.00	0.10	...	0.10	208.55	...	208.55
	<i>Total</i>		110.00	...	110.00	124.86	...	124.86	239.00	...	239.00
49.	Others	3402	3.43	35.42	38.85	3.43	39.89	43.32	3.00	39.86	42.86
		5402	12.86	...	12.86	9.89	...	9.89	9.58	...	9.58
	<i>Total</i>		16.29	35.42	51.71	13.32	39.89	53.21	12.58	39.86	52.44
<b>Total - Direction &amp; Administration / Other Programmes</b>			<b>126.29</b>	<b>35.42</b>	<b>161.71</b>	<b>138.18</b>	<b>39.89</b>	<b>178.07</b>	<b>251.58</b>	<b>39.86</b>	<b>291.44</b>
<b>INSAT Operational</b>											
50.	Master Control Facility(MCF)	3252	14.88	10.46	25.34	13.66	10.54	24.20	13.91	11.10	25.01
		5252	15.16	...	15.16	10.64	...	10.64	26.67	...	26.67
	<i>Total</i>		30.04	10.46	40.50	24.30	10.54	34.84	40.58	11.10	51.68
51.	INSAT-3 Satellites (Including Launch Services)	3252	59.07	...	59.07	73.81	...	73.81	29.35	...	29.35
		5252	10.03	...	10.03	7.29	...	7.29	12.75	...	12.75
	<i>Total</i>		69.10	...	69.10	81.10	...	81.10	42.10	...	42.10
52.	INSAT-4 Satellites(Including Launch Services)	3252	272.47	...	272.47	336.22	...	336.22	75.00	...	75.00
		5252	6.28	...	6.28	6.08	...	6.08	321.00	...	321.00
	<i>Total</i>		278.75	...	278.75	342.30	...	342.30	396.00	...	396.00
<b>Total - INSAT Operational</b>			<b>377.89</b>	<b>10.46</b>	<b>388.35</b>	<b>447.70</b>	<b>10.54</b>	<b>458.24</b>	<b>478.68</b>	<b>11.10</b>	<b>489.78</b>
53.	Aid Materials & Equipment-Gross Deduct-Transfers to Functional Major Head	3606	...	0.02	0.02	...	0.02	0.02	...	0.02	0.02
	Net-Aid Materials & Equipment	3606	...	-0.02	-0.02	...	-0.02	-0.02	...	-0.02	-0.02
	<i>Total</i>		...	...	...	...	...	...	...	...	...
<b>Grand Total</b>			<b>3220.00</b>	<b>390.00</b>	<b>3610.00</b>	<b>2600.00</b>	<b>397.00</b>	<b>2997.00</b>	<b>3420.00</b>	<b>438.60</b>	<b>3858.60</b>
<b>C. Plan Outlay</b>		Head of Dev	Budget Support	IEBR	Total	Budget Support	IEBR	Total	Budget Support	IEBR	Total
1.	Space Research	13402	3220.00	...	3220.00	2600.00	...	2600.00	3420.00	...	3420.00

1. **Secretariat- Economics Services:** Provision is made for expenditure to be incurred on the Secretariat of the Department of Space.

2. **Geo-Synchronous Satellite Launch Vehicle (GSLV) Project:** The GSLV Project envisages the development of a launch vehicle capable of launching 2 tonne INSAT-class satellites into Geo-synchronous Transfer Orbit (GTO). The third test flight will carry the indigenous cryogenic engine & stage.

3. **GSLV Mk-III Development:** GSLVMk-III is intended to develop a cost effective launch vehicle capable of launching 4 tonne class of communication satellites in Geo-synchronous Transfer Orbit (GTO) and upto 10 tonne satellites in Low Earth Orbit. The first developmental flight of the vehicle is targeted for realization during 2008-2009.

4. **Cryogenic Upper Stage(CUS) Project:** The objective of the Project is to develop and qualify an indigenous restartable cryogenic stage employing liquid oxygen, an oxidizer and liquid hydrogen, a fuel for the upper stage of GSLV.

5. **Polar Satellite Launch Vehicle-Continuation (PSLV-C) Project:** The PSLV is capable of placing 1400-1600 kg class IRS satellites in Polar Sun-synchronous Orbit, 1000 kg. class satellites into Geo-synchronous Transfer Orbit and upto 2800 kg class satellites into Low Earth Orbit. Recently, PSLV-C7 has been successfully launched placing four satellites i.e. Cartosat-2 Space Capsule Recovery Experiment (SRE-I), TUBSAT and PEHUENSAT-1 in the predetermined orbit. This was the ninth consecutive successful flight of PSLV.

6. **Vikram Sarabhai Space Centre(VSSC):** VSSC is the lead Centre for the development of satellite launch vehicles and sounding rockets and houses the major test and fabrication facilities for launch vehicles.

7. **ISRO Inertial Systems Unit(IISU):** IISU is responsible for research & development in the area of inertial sensors & systems for launch vehicles, satellites and allied satellite elements.

8. **Liquid Propulsion Systems Centre (LPSC):** LPSC is the lead Centre in the area of liquid and cryogenic rocket engines and stages for launch vehicle and small thrust engines for launch vehicles and spacecraft control.

9. **GSLV-Operational Project:** The GSLV-Operational Project has been conceived to meet the launch requirement of 2 tonne class of operational INSAT satellites. The first operational flight of GSLV-F01 was successfully launched on 20.9.2004 placing EDUSAT Satellites into orbit. The launch of GSLV-F02 on 10.7.2006 was unsuccessful due to malfunctioning of one of the strapon stages. A national level failure analysis committee has reviewed the flight data and recommended certain additional tests/improved inspection process, which are being implemented for the next flight, planned during 2007-08.

10. **Space Capsule Recovery Experiment (SRE):** The main objective of the Space Capsule Recovery Experiment (SRE) is to develop and demonstrate capability to recover an orbiting capsule back on earth. SRE-I was launched successfully on-board PSLV on January 10, 2007 and was also successfully recovered from Bay of Bengal on January 22, 2007.

11. **Manned Mission Initiatives:** Indian Manned Mission Space program is envisaged as a national effort with ISRO playing the lead role to develop a fully autonomous orbital vehicle

to carry two member crew to low earth orbit and safely return them to earth. Mission design, analysis and development of critical technologies and facilities are planned as preproject activities of Manned Mission Initiatives.

12. **Indian Institute of Space Science & Technology:** Indian Institute of Space Science & Technology, registered as a society, is intended to generate the high quality manpower with educational background customized to meet requirements of Space program. The institute is planned to be functional from the academic year 2007-08 from Thiruvananthapuram.

13. **Semi Cryogenic Engine/Stage Development:** The objective of the project is to develop and qualify a high thrust semi cryogenic engine and stage (employing kerosene of required grade/spar as fuel and liquid oxygen as oxidizer) for the future advanced launch vehicle.

14. **Cartosat-2:** The Cartosat-2 Project is an advanced high resolution satellite to support large scale cartographic mapping and thematic applications. Cartosat-2 was successfully launched on board PSLV-C7 on January 10, 2007.

15. **Oceansat-2:** The main objective of Oceansat-2 is to provide continuity of data & services hitherto provided by Oceansat-1 on Oceanography and coastal studies.

16. **Resourcesat-2:** Resourcesat-2 will be mainly for crop applications, vegetation dynamics and natural resources census applications. It is intended to provide continuity of remote sensing data for Resourcesat-1.

17. **ISRO Satellite Centre(ISAC):** ISAC is the lead Centre for the design fabrication, testing and management of satellite systems for scientific technological and application missions.

18. **Laboratory for Electro-Optics Systems(LEOS):** LEOS is responsible for research & development and production of electro-optics sensors.

19. **Radar Imaging Satellite-1 Project (RISAT-1):** Radar Imaging Satellite (RISAT) is intended to provide all-weather, day and night imaging capability providing vital inputs for various agricultural and disaster applications. The satellite is targeted for launch during 2008.

20. **GSAT-4:** The satellite will be utilized for conducting various experiments in the communications area and early introduction of geo-based navigation system. The satellite is targeted for launch during 2007-2008.

21. **Navigation Satellite System:** The Indian Regional Navigation Satellite System (IRNSS), is planned to be a constellation of 7 satellites – 3 in GEO and 4 in the GSO orbit. This satellite is expected to provide position accuracies similar to GPS in a region centered around India with a coverage extending upto 1500 km from India.

22. **Semi-conductor Development :** Semi Conductor Laboratory (SCL) is engaged in the design, development and manufacture of very large scale integrated circuits (VLSIs) and Board Level Products to meet the stringent quality requirement of strategic sectors.

23. **METSAT-2:** The main objective on METSAT-2 is to provide continuity of meteorological data and services hitherto provided by METSAT-1 redesignated as KALPANA-1, a dedicated meteorological satellite.

24. **Advanced Communication Satellite:** The main objective is to develop a 4 tonne class communication satellite incorporating advanced technologies of relevance for future.

25. **Earth Observation- New Mission (Geo-HR, Altika-Argos):** Indian Earth Observation program is directed towards providing continuity of EO data for resource management applications and enhancing the imaging capability. Towards this, it is planned to undertake development of imaging capability from Geostationary orbit for constant surveillance (GEO-HR) and small satellite for oceanographic studies(Altika Argos).

26. **Satish Dhawan Space Centre-SHAR(SDSC-SHAR):** SDSC SHAR provides the launch infrastructure as well as solid propellant processing.

27. **ISRO Telemetry, Tracking and Command Network(ISTRAC):** ISTRAC provides spacecraft TTC and Mission Control services to major launch vehicle and spacecraft missions.

28. **ISRO Radar Development Unit(ISRAD):** ISRAD is responsible for research, development and production of radar systems required for tracking and weather forecasting.

29. **Space Applications Centre(SAC):** SAC is the lead Centre for the development of communication, meteorological and remote sensing payload besides R&D in space applications.

30. **Development and Educational Communication Unit(DECU):** DECU is involved in the concept, definition, planning, implementation and socio-economic evaluation of developmental space applications.

31. **National Natural Resources Management System (NNRMS):** The National Natural Resources Management System (NNRMS) has the objective of ensuring optimal management/ utilization of natural resources by integrating information derived from remote sensing data with conventional techniques.

32. **Earth Observation Application Mission (EOAM):** The main goal of the Earth Observation Application Mission (EOAM) are to (i) evolve newer application/R&D program based on technology trends leading to operational applications program; (ii) guiding total remote sensing applications program towards implementation of remote-sensing based solutions, and (iii) steering commercial activities of remote sensing involving development of value added services.

33. **Regional Remote Sensing Services Centre (RRSSCs)** The five Regional Remote Sensing Centres (RRSSCs) at Bangalore, Dehradun, Jodhpur, Kharagpur and Nagpur have been established under the aegis of NNRMS with the prime objective of providing remote sensing application services to the user in the respective regions for better planning and optimal utilization of natural resources and also bring about awareness amongst the users on the potential of remote sensing and associated technologies.

34. **National Remote Sensing Agency(NRSA):** NRSA is a registered society and is the nodal agency for operational remote sensing activities in the country. It is responsible for acquisition, processing, distribution and archiving of data from remote sensing satellites.

35. **Disaster Management System (DMS):** The main objective of Disaster Management Support Programme is to provide Space inputs & services on a timely & reliable basis, for the Disaster Management System in the country.

36. **North Eastern Space Applications Centres (NE-SAC):** NE-SAC set up as an autonomous society jointly with North Eastern Council, is supporting the North Eastern region by providing information on natural resources utilization and monitoring, developmental planning and interactive training using space technology inputs of remote sensing and satellite communication.

37. **Physical Research Laboratory(PRL):** PRL, an autonomous institution funded by the Development of Space through grant-in-aid, is one of the premier research institutions in the country carrying out basic research in several areas of experimental & theoretical physics, earth sciences, astronomy and aeronomy & planetary exploration.

38. **National Atmospheric Research Laboratory (NARL):** NARL, a registered Society, is responsible for carrying out advanced research in atmospheric and space sciences and related disciplines.

39. **RESPOND:** The Sponsored Research (RESPOND) aims at strengthening the interaction between DOS/ISRO and academic institutions for generating human resource and supports research and developmental projects and other scientific activities at the academic institutions and R&D laboratories in the country in the area of relevance to the Space Programme.

40. **Sensor Payload Development Planetary Science Programme:** It includes funding requirement for advance action for activities related to scientific payload developments for space science and planetary exploration studies in different institutions and universities.

41. **Megha-Tropiques Project:** Megha-Tropiques is an ISRO-CNES (France) joint mission and is intended for studying tropical atmosphere and climate related to aspects such as monsoons, cyclones, etc. using a satellite platform.

42. **Astrosat:** The objective of the Astrosat project is to build and launch an astronomical observatory satellite for expanding the scientific knowledge about the evolution of stellar objects and gather valuable scientific data on high energy Astronomy and Astrophysics research. The satellite is planned for launch in the time frame of 2008-2009 onboard PSLV.

43. **Indian Lunar Chandrayaan-1:** The main objective of Indian Lunar Chandrayaan-1 is for expanding the scientific knowledge about the moon, upgrading technological capability and providing challenging opportunity for planetary research for a large number of growing young people of the country benefiting the human society at large. The Chandrayaan-1 is targeted for launch during 2008 on board the PSLV.

44. **ISRO Geosphere Biosphere Programme (ISRO GBP):** ISRO GBP encompasses the study of land and ocean interaction, past climate, changes in atmospheric composition, aerosols, carbon cycle, bio-mass estimation, bio-diversity and other related areas of scientific investigation.

45. **Atmospheric Science Program:** Atmospheric Science Program is intended to develop advanced observation tools & techniques of atmospheric modeling leading to operational end user products indifferent domains of atmospheric science.

46. **Small Satellite for Atmospheric Studies:** The project envisages development of small satellites for climate and weather science studies.

47. **Other Schemes:** These includes Microgravity Research Space Science promotion, multi-institutional research programs, Space Station experiment, setting up of Digital workflow systems, support for conferences, symposia, etc.

48. **Special Indigenisation/Advance Ordering:** Indigenisation envisages ISRO to have interface with the Indian industry to develop various electronic components, materials, chemicals, etc. for the space program. The scope of the scheme also includes procurement of certain long lead and critical items for futuristic missions and development of Space materials, electronic components & micro electronic devices.

49. **Others:** Under this, provision has been included for ISRO Headquarters, International Co-operation, Centre from Space Science and Technology Education in Asia and the Pacific (CSSTE-AP), Search Rescue Project and Civil Engineering Division.

50. **Master Control Facility (MCF):** MCF is responsible for initial orbit raising, payload testing and in-orbit operation of all geo-stationary satellites.

51. **INSAT-3 Satellite (including Launch Services):** The objective of INSAT-3 Spacecraft Project are to (i) build five INSAT-3 satellites, (INSAT -3A to INSAT-3E) keeping the flexibility for mid-course corrections to accommodate emerging requirements, carryout mission planning, launch campaign and initial phase operations and (ii) establish required program elements for carrying out the same. INSAT-3D is targeted for launch during 2007-2008.

52. **INSAT-4 Satellite (including Launch Services):** The fourth generation INSAT-4 Satellite series has been planned to meet the capacity and service requirements projected by various users and development needs of the country.