



**Committee on the Peaceful
Uses of Outer Space**

**Information furnished in conformity with the Convention
on Registration of Objects Launched into Outer Space**

**Note verbale dated 27 March 2017 from the Permanent
Mission of France to the United Nations (Vienna) addressed
to the Secretary-General**

The Permanent Mission of France to the United Nations (Vienna), in accordance with the provisions of the Convention on Registration of Objects Launched into Outer Space, adopted on 12 November 1974, and of General Assembly resolution 62/101, adopted on 17 December 2007, has the honour to submit the following information on space objects registered by France in 2016.

In 2016, France registered 17 space objects (three satellites, of which two were registered on behalf of the European Telecommunications Satellite Organization (Eutelsat), and 14 launcher elements) in the French National Register of Objects Launched into Outer Space, which is maintained by the National Centre for Space Studies (CNES) on behalf of the State, in accordance with articles 12 and 28 of Law No. 2008-518 of 3 June 2008, pertaining to space operations, articles 14-1 to 14-6 of Decree No. 84-510 of 28 June 1984, pertaining to CNES, and the provisions of the order of 12 August 2011 establishing the list of information needed to identify a space object.

The Permanent Mission of France has the honour to note that the following information is provided in the annexes to the present note:

- Pursuant to article IV, paragraph 1, of the Registration Convention, a list of satellites registered by France (annex I, table 1), a list of space objects launched into orbit and registered by France (annex I, table 2) and a list of satellites launched from French territory on behalf of foreign operators (annex I, table 3)
- Pursuant to article IV, paragraph 3, of the Registration Convention, a list of objects registered by France that have re-entered the atmosphere (annex II)
- Pursuant to article IV, paragraph 2, of the Convention, additional information from the French National Register of Objects Launched into Outer Space relating to satellites operating in low Earth orbit (annex III, table 1), satellites operating in geostationary orbit (annex III, table 2) and satellites that remain in orbit but are no longer operational (annex III, table 3).

As at 31 December 2016, the French National Register contained 354 space objects, of which 127 were satellites (66 were operational) and 207 were component



parts of launchers (launcher stages and carrier structures). It should also be noted that, of the above-mentioned 127 satellites:

- Forty-five are listed as Eutelsat satellites, in accordance with an agreement that remains in force between France and Eutelsat-IGO under which the satellites of Eutelsat are registered by France (19 satellites were launched between 1983 and mid-2001, of which 4 are still operated by Eutelsat S.A.)
- The second-generation Globalstar satellites, of which there are currently 24, are now registered by France, in accordance with article 9 of the Order of 29 August 2011
- The Eutelsat 70D satellite registered by France, launched on 21 August 2002, was decommissioned on 7 August 2016
- The SPOT 7 satellite, initially registered by France in 2016, was transferred to and registered by Azerbaijan in December 2016 and was therefore removed from the French National Register.

The Permanent Mission of France has the further honour to note that registration data as at 31 December 2015 are also attached (see annexes IV-VI) for the information of the Office for Outer Space Affairs and to update the information contained in the Registry provided for under article III of the Registration Convention, which the Office maintains on behalf of the Secretary-General of the United Nations.

Annex I

Information on space objects launched by France in 2016*

Table 1

Registration data on satellites launched by France in 2016

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Satellites	State/organization
2016-005A	29 January 2016	Baikonur, Kazakhstan	Proton	1 436.08	0.06	35 806	35 767	Telecommunications satellite	..	Eutelsat 9B	France
2016-014A	9 March 2016	Kourou, French Guiana	Ariane 5 ECA	1 436.06	0.04	35 793	35 779	Telecommunications satellite	VA229	Eutelsat 65 West A	France
2016-025B	25 April 2016	Kourou, French Guiana	Soyuz-STA	99.04	98.23	714	711	Scientific satellite	VS14	MicroSCOPE	France

Table 2

Registration data on space objects launched by France in 2016

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/organization
2016-004B	27 January 2016	Kourou, French Guiana	Ariane 5 ECA	624.81	0.72	35 395	269	ESC-A cryogenic upper stage	VA228	ESC-A	France
2016-014B	9 March 2016	Kourou, French Guiana	Ariane 5 ECA	614.03	0.86	34 866	239	ESC-A cryogenic upper stage	VA229	ESC-A	France

* The data are reproduced in the form in which they were received.

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/organization
2016-025F	25 April 2016	Kourou, French Guiana	Soyuz ST-A	95.90	98.22	688	436	ASAP-S (Arianespace System for Auxiliary Payloads — Soyuz)	VS14	ASAP-S	France
2016-030C	24 May 2016	Kourou, French Guiana	Soyuz ST-B	859.20	57.26	23 611	23 509	Fregat stage	VS15	Fregat	France
2016-039C	18 June 2016	Kourou, French Guiana	Ariane 5 ECA	629.41	6.34	35 641	260	ESC-A cryogenic upper stage	VA230	ESC-A	France
2016-039D	18 June 2016	Kourou, French Guiana	Ariane 5 ECA	621.21	6.10	35 234	244	SYLDA carrier structure	VA230	SYLDA	France
2016-053C	24 August 2016	Kourou, French Guiana	Ariane 5 ECA	629.16	6.21	35 596	291	ESC-A cryogenic upper stage	VA232	ESC-A	France
2016-053D	24 August 2016	Kourou, French Guiana	Ariane 5 ECA	625.71	6.11	35 425	285	SYLDA carrier structure	VA232	SYLDA	France
2016-058F	16 September 2016	Kourou, French Guiana	VEGA	94.63	97.43	506	496	VESPA carrier structure	VV07	VESPA	France
2016-060C	5 October 2016	Kourou, French Guiana	Ariane 5 ECA	629.86	5.78	35 668	256	ESC-A cryogenic upper stage	VA231	ESC-A	France
2016-060D	5 October 2016	Kourou, French Guiana	Ariane 5 ECA	626.32	6.09	35 495	247	SYLDA carrier structure	VA231	SYLDA	France
2016-069E	17 November 2016	Kourou, French Guiana	Ariane 5 ES	830.90	54.52	22 902	22 896	EPS storable-propellant stage	VA233	EPS	France

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/organization
2016-082C	21 December 2016	Kourou, French Guiana	Ariane 5 ECA	630.84	6.45	35 726	248	ESC-A cryogenic upper stage	VA234	ESC-A	France
2016-082D	21 December 2016	Kourou, French Guiana	Ariane 5 ECA	630.07	6.02	35 690	245	SYLDA carrier structure	VA234	SYLDA	France

Table 3
Space objects operated by foreign satellite operators that were launched by France in 2016^a

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/organization
2016-004A	27 January 2016	Kourou, French Guiana	Ariane 5 ECA	1 436.15	0.04	35 797	35 778	Telecommunications satellite	VA228	Intelsat 29E	International Telecommunications Satellite Organization (ITSO)
2016-025A	25 April 2016	Kourou, French Guiana	Soyuz ST-A	98.68	98.18	697	695	Observation satellite	VS14	Sentinel-1B	European Space Agency (ESA)
2016-025C	25 April 2016	Kourou, French Guiana	Soyuz ST-A	95.85	98.2	684	435	Experiments	VS14	OUFTI-1	Belgium
2016-025D	25 April 2016	Kourou, French Guiana	Soyuz ST-A	95.85	98.2	684	435	Experiments	VS14	e-st@r-II	Italy
2016-025E	25 April 2016	Kourou, French Guiana	Soyuz ST-A	95.81	98.2	678	438	Experiments	VS14	AAUSAT 4	Denmark
2016-030A	24 May 2016	Kourou, French Guiana	Soyuz ST-B	844.7	57.26	23 235	23 209	Navigation satellite	VS15	Galileo 14 (26B)	ESA

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/organization
2016-030B	24 May 2016	Kourou, French Guiana	Soyuz ST-B	844.7	57.26	23 233	23 211	Navigation satellite	VS15	Galileo 13 (26A)	ESA
2016-039A	18 June 2016	Kourou, French Guiana	Ariane 5 ECA	1 436.13	0.02	35 794	35 780	Telecommunications satellite	VA230	BRIsat	Indonesia
2016-039B	18 June 2016	Kourou, French Guiana	Ariane 5 ECA	1 436.09	0.02	35 795	35 778	Telecommunications satellite	VA230	Echostar 18	United States of America
2016-053A	24 August 2016	Kourou, French Guiana	Ariane 5 ECA	1 436.1	0.02	35 795	35 778	Telecommunications satellite	VA232	Intelsat 36	ITSO
2016-053B	24 August 2016	Kourou, French Guiana	Ariane 5 ECA	1 436.14	0.02	35 799	35 776	Telecommunications satellite	VA232	Intelsat 33E	ITSO
2016-058A	16 September 2016	Kourou, French Guiana	VEGA	98.73	98.2	699	697	Observation satellite	VV07	PeruSat-1	Peru
2016-058B	16 September 2016	Kourou, French Guiana	VEGA	94.61	97.41	501	498	Observation satellite	VV07	SkySat C4	United States
2016-058C	16 September 2016	Kourou, French Guiana	VEGA	94.66	97.41	504	500	Observation satellite	VV07	SkySat C5	United States
2016-058D	16 September 2016	Kourou, French Guiana	VEGA	94.61	97.41	501	498	Observation satellite	VV07	SkySat C2	United States
2016-058E	16 September 2016	Kourou, French Guiana	VEGA	94.61	97.41	500	499	Observation satellite	VV07	SkySat C3	United States
2016-060A	5 October 2016	Kourou, French Guiana	Ariane 5 ECA	1 436.11	0.08	35 801	35 773	Telecommunications satellite	VA231	GSAT-18	India

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/organization
2016-060B	5 October 2016	Kourou, French Guiana	Ariane 5 ECA	1 436.13	0.02	35 796	35 779	Telecommunications satellite	VA231	Sky Muster II	Australia
2016-069A	17 November 2016	Kourou, French Guiana	Ariane 5 ES Galileo	844.71	54.59	23 229	23 216	Navigation satellite	VA233	Galileo 15	ESA
2016-069B	17 November 2016	Kourou, French Guiana	Ariane 5 ES Galileo	836.93	54.58	23 049	23 031	Navigation satellite	VA233	Galileo 16	ESA
2016-069C	17 November 2016	Kourou, French Guiana	Ariane 5 ES Galileo	834.17	54.57	22 986	22 965	Navigation satellite	VA233	Galileo 17	ESA
2016-069D	17 November 2016	Kourou, French Guiana	Ariane 5 ES Galileo	842.16	54.58	23 174	23 151	Navigation satellite	VA233	Galileo 18	ESA
2016-073A	5 December 2016	Kourou, French Guiana	VEGA	98.44	98.12	685	683	Observation satellite	VV08	Göktürk-1A	Turkey
2016-082A	21 December 2016	Kourou, French Guiana	Ariane 5 ECA	1 436.12	0.05	35 796	35 778	Telecommunications satellite	VA234	JCSAT-15	Japan
2016-082B	21 December 2016	Kourou, French Guiana	Ariane 5 ECA	1 436.1	0.06	35 790	35 783	Telecommunications satellite	VA234	Star One D1	Brazil

^a These space objects are not registered by France.

Annex II

Information provided by France in conformity with article IV, paragraph 3, of the Convention on Registration of Objects Launched into Outer Space on space objects registered by France that re-entered the Earth's atmosphere in 2016*

<i>Registration number</i>	<i>Date of the launch</i>	<i>General function of the space object</i>	<i>Date of atmospheric re-entry</i>
1990-091C	12 October 1990	Ariane 44L stage	20 September 2016
2006-054C	8 December 2006	Ariane 5 SYLDA	24 July 2016
2009-035B	1 July 2009	Ariane 5 stage	31 October 2016
2012-062D	10 November 2012	Ariane 5 SYLDA	8 November 2016

Note: Data do not include re-entering debris of objects which remain in orbit or which have previously re-entered the atmosphere (examples from the current year are objects with North American Aerospace Defense Command catalogue numbers 34188 and 40777, respectively).

* The registration data are reproduced in the form in which they were received.

Annex III

Additional information provided by France in conformity with article IV, paragraph 2, of the Convention on Registration of Objects Launched into Outer Space on space objects registered by France as at 31 December 2016*

Table 1

Satellites registered by France and operating in low Earth orbit^a

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Type of orbit</i>
1.	2004-049A	Helios 2A space observation satellite	Polar orbit
2.	2006-016B	Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation (CALIPSO) satellite for three-dimensional characterization of clouds and aerosols	700 km polar orbit
3.	2008-032A	French-American Jason-2 oceanography satellite	1 330 km orbit inclined at 66°
4.	2009-073A	Helios 2B space observation satellite	Polar orbit
5.	2010-054A	Globalstar M079 communications satellite	1 400 km orbit inclined at 52°
6.	2010-054B	Globalstar M074 communications satellite	1 400 km orbit inclined at 52°
7.	2010-054C	Globalstar M076 communications satellite	1 400 km orbit inclined at 52°
8.	2010-054D	Globalstar M077 communications satellite	1 400 km orbit inclined at 52°
9.	2010-054E	Globalstar M075 communications satellite	1 400 km orbit inclined at 52°
10.	2010-054F	Globalstar M073 communications satellite	1 400 km orbit inclined at 52°
11.	2011-033A	Globalstar M083 communications satellite	1 400 km orbit inclined at 52°
12.	2011-033B	Globalstar M088 communications satellite	1 400 km orbit inclined at 52°
13.	2011-033C	Globalstar M091 communications satellite	1 400 km orbit inclined at 52°
14.	2011-033D	Globalstar M085 communications satellite	1 400 km orbit inclined at 52°
15.	2011-033E	Globalstar M081 communications satellite	1 400 km orbit inclined at 52°
16.	2011-033F	Globalstar M089 communications satellite	1 400 km orbit inclined at 52°
17.	2011-076A	ELISA W11 listening system microsatellite	Polar orbit

* The registration data are reproduced in the form in which they were received.

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Type of orbit</i>
18.	2011-076B	ELISA E24 listening system microsatellite	Polar orbit
19.	2011-076C	ELISA W23 listening system microsatellite	Polar orbit
20.	2011-076D	ELISA E12 listening system microsatellite	Polar orbit
21.	2011-076F	Pleiades-1A Earth observation satellite	700 km polar orbit
22.	2011-080A	Globalstar M084 communications satellite	1 400 km orbit inclined at 52°
23.	2011-080B	Globalstar M080 communications satellite	1 400 km orbit inclined at 52°
24.	2011-080C	Globalstar M082 communications satellite	1 400 km orbit inclined at 52°
25.	2011-080D	Globalstar M092 communications satellite	1 400 km orbit inclined at 52°
26.	2011-080E	Globalstar M090 communications satellite	1 400 km orbit inclined at 52°
27.	2011-080F	Globalstar M086 communications satellite	1 400 km orbit inclined at 52°
28.	2012-047A	SPOT 6 Earth observation satellite	700 km polar orbit
29.	2012-068A	Pleiades-1B Earth observation satellite	700 km polar orbit
30.	2013-005A	Globalstar M097 communications satellite	1 400 km orbit inclined at 52°
31.	2013-005B	Globalstar M093 communications satellite	1 400 km orbit inclined at 52°
32.	2013-005C	Globalstar M094 communications satellite	1 400 km orbit inclined at 52°
33.	2013-005D	Globalstar M096 communications satellite	1 400 km orbit inclined at 52°
34.	2013-005E	Globalstar M078 communications satellite	1 400 km orbit inclined at 52°
35.	2013-005F	Globalstar M095 communications satellite	1 400 km orbit inclined at 52°
36.	2016-025B	MicroSCOPE scientific satellite	700 km orbit inclined at 98°

^a Bold font denotes new additions to table for 2016.

Table 2
Satellites registered by France and operating in geostationary orbit^a

No.	Registration number	Satellite	Orbital position
1.	1996-067A	Eutelsat 48A telecommunications satellite (formerly W48, Eurobird 9 and Hot Bird 2)	48° E
2.	2000-019A	Eutelsat 16C telecommunications satellite (formerly SESAT 1)	16° E
3.	2000-028A	Eutelsat 88A telecommunications satellite (formerly Eutelsat 70C)	88.5° E
4.	2001-011A	Eutelsat 33C telecommunications satellite (formerly Eutelsat 28A and Eurobird 1)	33.1° E
5.	2001-042A	Eutelsat 12 West B (formerly Eutelsat 8 West A and Atlantic Bird 2)	12.7° W
6.	2002-035A	Eutelsat 5 West A telecommunications satellite (formerly Atlantic Bird 3)	5° W
7.	2002-040A	Eutelsat 36 West A (formerly Eutelsat 12 West A and Atlantic Bird 1)	36° E
8.	2003-043A	Eutelsat 31A telecommunications satellite (formerly Eutelsat 33A, Eurobird 3 and eBird)	30.8° E
9.	2004-008A	Eutelsat 7A telecommunications satellite (formerly W3A)	7° E
10.	2005-041B	Syracuse 3A telecommunications satellite	47° E
11.	2006-007B	Eutelsat Hot Bird 13E telecommunications satellite (formerly Eutelsat 9A, Eurobird 9A, Hot Bird 7A)	13° E
12.	2006-032A	Eutelsat Hot Bird 13B telecommunications satellite (formerly Hot Bird 8)	13° E
13.	2006-033B	Syracuse 3B telecommunications satellite	5° W
14.	2008-065A	Eutelsat Hot Bird 13C telecommunications satellite (formerly Hot Bird 9)	13° E
15.	2008-065B	Eutelsat 48D telecommunications satellite (formerly Eutelsat 28B, Eutelsat 48B and W2M)	48.1° E
16.	2009-008B	Eutelsat 33E telecommunications satellite (formerly Eutelsat 3C, Atlantic Bird 4A and Hot Bird 10, then redeployed and renamed Hot Bird 13D in 2013)	33.1° E
17.	2009-016A	Eutelsat 10A telecommunications satellite (formerly W2A)	10° E
18.	2009-065A	Eutelsat 36B telecommunications satellite (formerly W7)	35.9° E
19.	2010-069A	Eutelsat KA-SAT 9A telecommunications satellite (formerly KA-SAT)	9° E
20.	2011-051A	Eutelsat 7 West A telecommunications satellite (formerly Atlantic Bird 7)	7.3° W
21.	2011-057A	Eutelsat 16A telecommunications satellite (formerly W3C)	16° E
22.	2012-062B	Eutelsat 21B telecommunications satellite (formerly W6A)	21.5° E
23.	2012-069A	Eutelsat 70B telecommunications satellite (formerly W5A)	70.5° E

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Orbital position</i>
24.	2013-022A	Eutelsat 7B telecommunications satellite (formerly 3D and W3D)	7° E
25.	2013-044A	Eutelsat 25B telecommunications satellite (formerly EB 2A)	25.5° E
26.	2014-006B	Athena-Fidus telecommunications satellite	25° E
27.	2014-030A	Eutelsat 3B telecommunications satellite	3.1° E
28.	2015-039B	Eutelsat 8 West B telecommunications satellite	8° W
29.	2016-005A	Eutelsat 9B telecommunications satellite	9° E
30.	2016-014A	Eutelsat 65 West A telecommunications satellite	65° W

^a Bold font denotes new additions or amendments to table for 2016.

Table 3
French satellites still in orbit but no longer operational^a

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Orbit</i>
1.	1965-096A	Al experimental satellite (Astérix)	Low Earth orbit (LEO)
2.	1965-101A	FRI technological satellite	LEO
3.	1966-013A	Diapason D1 experimental satellite	LEO
4.	1967-011A	Diadème 1 experimental satellite	LEO
5.	1967-014A	Diadème 2 experimental satellite	LEO
6.	1971-071A	EOLE 1 (CAS-A) experimental data-collection satellite	LEO
7.	1974-101A	Symphonie 1 experimental telecommunications satellite	Geostationary Earth orbit (GEO)
8.	1975-010A	Starlette scientific satellite	LEO
9.	1975-077A	Symphonie 2 experimental telecommunications satellite	GEO
10.	1983-058A	Eutelsat I-F1 (ECS 1) telecommunications satellite (European Space Agency (ESA))	GEO
11.	1984-081A	Eutelsat I-F2 (ECS 2) telecommunications satellite (ESA)	GEO
12.	1984-081B	Telecom 1A telecommunications satellite	GEO
13.	1985-035B	Telecom 1B telecommunications satellite	GEO

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Orbit</i>
14.	1986-019A	SPOT 1 Earth observation satellite (deorbiting manoeuvres effected in November 2003 to lower the satellite's perigee to below 600 km with a view to achieving re-entry within 25 years)	LEO
15.	1987-078B	Eutelsat I-F4 (ECS 4) telecommunications satellite	GEO
16.	1988-018B	Telecom 1C telecommunications satellite	GEO
17.	1988-063B	Eutelsat I-F (ECS 5) telecommunications satellite (ESA)	GEO
18.	1988-098A	TDF 1 live television satellite	GEO
19.	1990-005A	SPOT 2 Earth observation satellite (final deorbiting manoeuvres effected on 29 July 2009 to lower the satellite's perigee to below 600 km with a view to achieving re-entry within 25 years)	LEO
20.	1990-063A	TDF 2 live television satellite	GEO
21.	1990-079B	Eutelsat II-F1 telecommunications satellite	GEO
22.	1991-003B	Eutelsat II-F2 telecommunications satellite	GEO
23.	1991-050E	Satellite for Amateur Radio Astronomy (SARA)	LEO
24.	1991-083A	Eutelsat II-F3 telecommunications satellite	GEO
25.	1991-084A	Telecom 2A telecommunications satellite	GEO
26.	1992-021A	Telecom 2B telecommunications satellite	GEO
27.	1992-041B	Eutelsat II-F4 telecommunications satellite	GEO
28.	1992-052C	S80/T technological satellite	LEO
29.	1993-031B	ARSENE amateur radio satellite (perigee ~17 000 km)	Geostationary transfer orbit (GTO)
30.	1993-061A	SPOT 3 Earth observation satellite (orbit >800 km)	LEO
31.	1993-061B	Stella scientific satellite (800 km)	LEO
32.	1995-016B	Hot Bird 1 telecommunications satellite (Eutelsat II F6)	GEO
33.	1995-033A	Helios 1A observation satellite (deactivated in February 2012 following deorbiting manoeuvres)	LEO
34.	1995-033B	Cerise research satellite (orbit ~600 km)	LEO
35.	1995-067A	TELECOM 2C telecommunications satellite	GEO
36.	1996-044B	TELECOM 2D telecommunications satellite (deactivated in November 2012 following deorbiting manoeuvres)	GEO

No.	Registration number	Satellite	Orbit
37.	1997-049A	W75 telecommunications satellite (formerly Eurobird 4, Hot Bird 3) (deactivated in July 2011 following deorbiting manoeuvres)	GEO
38.	1998-013A	Eutelsat 16B telecommunications satellite (formerly Eurobird 16, Hot Bird 4)	GEO
39.	1998-017A	SPOT 4 Earth observation satellite, 820 km sun-synchronous orbit (ceased operating on 29 June 2013)	LEO
40.	1998-056A	Eutelsat W2 telecommunications satellite (deactivated in March 2010 following deorbiting manoeuvres)	GEO
41.	1998-057A	Eutelsat 25A telecommunications satellite (formerly Eurobird 2, Hot Bird 5), redeployed and renamed Eutelsat 4B in 2013 (deactivated in September 2013 following deorbiting manoeuvres)	GEO
42.	1991-018A	Eutelsat 21A telecommunications satellite (formerly W6, W3), redeployed and renamed Eutelsat 48C in 2013 (retired from service on 9 November 2014)	GEO
43.	1994-064A	Helios 1B space observation satellite (withdrawn from service on 21 October 2004 with a perigee of ~630 km)	LEO
44.	1999-064B	Clémentine experimental satellite (perigee ~600 km)	LEO
45.	2000-052A	Eurobird 4A telecommunications satellite (formerly W1) (deactivated in February 2012 following deorbiting manoeuvres)	GEO
46.	2001-055A	French-American Jason-1 oceanography satellite, orbit inclined at 66° (mission ended on 3 July 2013)	LEO
47.	2002-021A	SPOT 5 Earth observation satellite (820 km sun-synchronous orbit)	LEO
48.	2002-021B	IDEFIX amateur radio satellite (attached to third stage of Ariane 4-V151 launcher; orbit ~800 km)	LEO
49.	2002-038A	Eutelsat 70D telecommunications satellite (formerly Hot Bird 13A) (withdrawn from service on 7 August 2016)	GEO
50.	2002-051A	Eutelsat 70A telecommunications satellite (formerly W5); redeployed and renamed Eutelsat 25C, then Eutelsat 33B in 2013	GEO
51.	2004-025C	DEMETER scientific microsatellite (scientific use terminated in December 2010; deactivated in February 2011; 650 km orbit)	LEO
52.	2004-049C	Essaim 1 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010; re-entry in less than 25 years)	LEO

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Orbit</i>
53.	2004-049D	Essaim 2 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010; re-entry in less than 25 years)	LEO
54.	2004-049E	Essaim 3 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010; re-entry in less than 25 years)	LEO
55.	2004-049F	Essaim 4 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010; re-entry in less than 25 years)	LEO
56.	2004-049G	Polarization and Anisotropy of Reflectances for Atmospheric Sciences coupled with Observations from a Lidar (PARASOL) microsatellite for characterization of the radiative and microphysical properties of clouds and aerosols, 700 km polar orbit (ceased operating on 18 December 2013)	LEO
57.	2006-063A	Convection, Rotation and Planetary Transits (COROT) satellite for the study of stars and exoplanet detection (end of lifetime on 17 June 2014)	LEO
58.	2009-008C	Spirale A experimental satellite (deactivated early 2011)	GTO
59.	2009-008D	Spirale B experimental satellite (deactivated early 2011)	GTO
60.	2010-028A	Picard microsatellite for solar research (end of lifetime on 4 April 2014)	LEO
61.	2010-056A	Eutelsat W3B telecommunications satellite (failed launch into geostationary orbit; remains in GTO)	GTO

^a Bold font denotes new additions to table for 2016.

Annex IV

Information on space objects launched by France in 2015*

Table 1

Registration data on satellites launched by France in 2015

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Satellites	State/organization
2015-039B	20 August 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 801	35 772	Communications satellite	VA225	Eutelsat 8 West B	France

Table 2

Registration data on space objects launched by France in 2015

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/organization
2015-017C	27 March 2015	Kourou, French Guiana	Soyuz ST-B	859	55	23 603	23 496	Fregat stage	S11	Fregat	France
2015-022C	26 April 2015	Kourou, French Guiana	Ariane 5 ECA	619	5	35 142	199	ESC-A cryogenic upper stage	A222	ESC-A	France
2015-022D	26 April 2015	Kourou, French Guiana	Ariane 5 ECA	465	6	26 828	175	SYLDA carrier structure	A222	SYLDA	France
2015-026C	27 May 2015	Kourou, French Guiana	Ariane 5 ECA	624	4	35 389	216	ESC-A cryogenic upper stage	A223	ESC-A	France
2015-026D	27 May 2015	Kourou, French Guiana	Ariane 5 ECA	588	4	33 549	209	SYLDA carrier structure	A223	SYLDA	France
2015-028B	23 June 2015	Kourou, French Guiana	VEGA	96	99	775	399	VEGA stage	VV05	AVUM R/B	France
2015-034C	15 July 2015	Kourou, French Guiana	Ariane 5 ECA	632	4	35 765	283	ESC-A cryogenic upper stage	A224	ESC-A	France

* The data are reproduced in the form in which they were received.

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/organization
2015-034D	15 July 2015	Kourou, French Guiana	Ariane 5 ECA	620	4	35 168	261	SYLDA carrier structure	A224	SYLDA	France
2015-039C	20 August 15	Kourou, French Guiana	Ariane 5 ECA	630	5	35 660	256	ESC-A cryogenic upper stage	A225	ESC-A	France
2015-039D	20 August 2015	Kourou, French Guiana	Ariane 5 ECA	621	5	35 215	245	SYLDA carrier structure	A225	SYLDA	France
2015-045C	11 September 2015	Kourou, French Guiana	Soyuz ST-B	858	57	23 587	23 478	Fregat stage	S12	Fregat	France
2015-054C	30 September 2015	Kourou, French Guiana	Ariane 5 ECA	629	6	35 638	244	ESC-A cryogenic upper stage	A226	ESC-A	France
2015-054D	30 September 2015	Kourou, French Guiana	Ariane 5 ECA	622	6	35 257	243	SYLDA carrier structure	A226	SYLDA	France
2015-065C	10 November 2015	Kourou, French Guiana	Ariane 5 ECA	632	4	35 755	266	ESC-A cryogenic upper stage	A227	ESC-A	France
2015-065D	10 November 2015	Kourou, French Guiana	Ariane 5 ECA	626	4	35 450	262	SYLDA carrier structure	A227	SYLDA	France
2015-079C	17 December 2015	Kourou, French Guiana	Soyuz ST-B	859	55	23 580	23 549	Fregat stage	S13	Fregat	France

Table 3
Space objects operated by foreign satellite operators that were launched by France in 2015^a

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/organization
2015	11 February 2015	Kourou, French Guiana	VEGA	..	..	..	..	European Space Agency (ESA) experimental spaceplane	VV04	IXV	ESA
2015-017A	27 March 2015	Kourou, French Guiana	Soyuz ST-B	845	55	23 236	23 208	Navigation satellite	VS11	Galileo 7	ESA

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/ organization
2015-017B	27 March 2015	Kourou, French Guiana	Soyuz ST-B	845	55	23 231	23 213	Navigation satellite	VS11	Galileo 8	ESA
2015-022A	26 April 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 798	35 776	Telecommunications satellite	VA222	Thor 7	Norway
2015-022B	26 April 2015	Kourou, French Guiana	Ariane 5 ECA	..	..	..	..	Telecommunications satellite	VA222	Sicral 2	Italy
2015-026A	27 May 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 789	35 784	Telecommunications satellite	VA223	DirecTV 15	United States of America
2015-026B	27 May 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 795	35 778	Telecommunications satellite	VA223	Sky Mexico 1	Mexico
2015-028A	22 June 2015	Kourou, French Guiana	VEGA	101	99	790	788	Earth observation satellite	VV05	Sentinel 2A	ESA
2015-034B	15 July 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 797	35 776	Telecommunications satellite	VA224	Star One C4	Brazil
2015-034A	15 July 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	3	35 796	35 779	Meteorological satellite	VA224	MSG 4	ESA
2015-039A	20 August 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 789	35 784	Telecommunications satellite	VA225	Intelsat 34	International Telecommunications Satellite Organization
2015-045A	11 September 2015	Kourou, French Guiana	Soyuz ST-B	845	57	23 236	23 208	Navigation satellite	VS12	Galileo 9	ESA
2015-045B	11 September 2015	Kourou, French Guiana	Soyuz ST-B	845	57	23 233	23 212	Navigation satellite	VS12	Galileo 10	ESA

Registration number	Date of the launch	Launch site	Name of the launcher	Basic orbital characteristics				General function of the space object	Launch number	Remarks	
				Nodal period (minutes)	Inclination (degrees)	Apogee (km)	Perigee (km)			Launched space object	State/ organization
2015-054A	30 September 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 795	35 779	Telecommunications satellite	A226	Sky Muster	Australia
2015-054B	30 September 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 793	35 780	Telecommunications satellite	A226	ARSAT 2	Argentina
2015-065B	10 November 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 805	35 769	Telecommunications satellite	A227	Arabsat 6B (Badr 7)	Arab Satellite Communications Organization
2015-065A	10 November 2015	Kourou, French Guiana	Ariane 5 ECA	1 436	0	35 798	35 776	Telecommunications satellite	A227	GSAT 15	India
2015-070A	3 December 2015	Kourou, French Guiana	VEGA	818	6	44 473	710	Technology demonstration satellite	VV06	LISA Pathfinder	ESA
2015-079B	17 December 2015	Kourou, French Guiana	Soyuz ST-B	845	55	23 226	23 218	Navigation satellite	VS13	Galileo 11	ESA
2015-079A	17 December 2015	Kourou, French Guiana	Soyuz ST-B	845	55	23 229	23 215	Navigation satellite	VS13	Galileo 12	ESA

^a These space objects are not registered by France.

Annex V

Information provided by France in conformity with article IV, paragraph 3, of the Convention on Registration of Objects Launched into Outer Space on space objects registered by France that re-entered the Earth's atmosphere in 2015*

<i>Registration number</i>	<i>Date of the launch</i>	<i>General function of the space object</i>	<i>Date of atmospheric re-entry</i>
2012-006H	13 February 2012	Radiation On Bipolar University Satellite Test Application (ROBUSTA) satellite	28 January 2015
2001-052B	27 November 2001	Ariane 4 stage	12 May 2015
1999-084B	1 December 1992	Ariane 4 stage	17 May 2015
2011-049D	21 September 2011	Ariane 5 SYLDA	19 September 2015
2010-056D	28 October 2010	Ariane 5 SYLDA	2 November 2015

* The registration data are reproduced in the form in which they were received.

Annex VI

Additional information provided by France in conformity with article IV, paragraph 2, of the Convention on Registration of Objects Launched into Outer Space on space objects registered by France as at 31 December 2015*

Table 1
Satellites registered by France and operating in low Earth orbit

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Type of orbit</i>
1.	2004-049A	Helios 2A space observation satellite	Polar orbit
2.	2006-016B	Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation (CALIPSO) satellite for three-dimensional characterization of clouds and aerosols	700 km polar orbit
3.	2008-032A	French-American Jason-2 oceanography satellite	1 330 km orbit inclined at 66°
4.	2009-073A	Helios 2B space observation satellite	Polar orbit
5.	2010-054A	Globalstar M079 communications satellite	1 400 km orbit inclined at 52°
6.	2010-054B	Globalstar M074 communications satellite	1 400 km orbit inclined at 52°
7.	2010-054C	Globalstar M076 communications satellite	1 400 km orbit inclined at 52°
8.	2010-054D	Globalstar M077 communications satellite	1 400 km orbit inclined at 52°
9.	2010-054E	Globalstar M075 communications satellite	1 400 km orbit inclined at 52°
10.	2010-054F	Globalstar M073 communications satellite	1 400 km orbit inclined at 52°
11.	2011-033A	Globalstar M083 communications satellite	1 400 km orbit inclined at 52°
12.	2011-033B	Globalstar M088 communications satellite	1 400 km orbit inclined at 52°
13.	2011-033C	Globalstar M091 communications satellite	1 400 km orbit inclined at 52°
14.	2011-033D	Globalstar M085 communications satellite	1 400 km orbit inclined at 52°
15.	2011-033E	Globalstar M081 communications satellite	1 400 km orbit inclined at 52°
16.	2011-033F	Globalstar M089 communications satellite	1 400 km orbit inclined at 52°
17.	2011-076A	ELISA W11 listening system microsatellite	Polar orbit

* The registration data are reproduced in the form in which they were received.

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Type of orbit</i>
18.	2011-076B	ELISA E24 listening system microsatellite	Polar orbit
19.	2011-076C	ELISA W23 listening system microsatellite	Polar orbit
20.	2011-076D	ELISA E12 listening system microsatellite	Polar orbit
21.	2011-076F	Pleiades-1A Earth observation satellite	700 km polar orbit
22.	2011-080A	Globalstar M084 communications satellite	1 400 km orbit inclined at 52°
23.	2011-080B	Globalstar M080 communications satellite	1 400 km orbit inclined at 52°
24.	2011-080C	Globalstar M082 communications satellite	1 400 km orbit inclined at 52°
25.	2011-080D	Globalstar M092 communications satellite	1 400 km orbit inclined at 52°
26.	2011-080E	Globalstar M090 communications satellite	1 400 km orbit inclined at 52°
27.	2011-080F	Globalstar M086 communications satellite	1 400 km orbit inclined at 52°
28.	2012-047A	SPOT 6 Earth observation satellite	700 km polar orbit
29.	2012-068A	Pleiades-1B Earth observation satellite	700 km polar orbit
30.	2013-005A	Globalstar M097 communications satellite	1 400 km orbit inclined at 52°
31.	2013-005B	Globalstar M093 communications satellite	1 400 km orbit inclined at 52°
32.	2013-005C	Globalstar M094 communications satellite	1 400 km orbit inclined at 52°
33.	2013-005D	Globalstar M096 communications satellite	1 400 km orbit inclined at 52°
34.	2013-005E	Globalstar M078 communications satellite	1 400 km orbit inclined at 52°
35.	2013-005F	Globalstar M095 communications satellite	1 400 km orbit inclined at 52°
36.	2014-034A	SPOT 7 Earth observation satellite	700 km polar orbit

Table 2
Satellites registered by France and operating in geostationary orbit^a

<i>Registration No. number</i>	<i>Satellite</i>	<i>Orbital position</i>
1. 1996-067A	Eutelsat 48A telecommunications satellite (formerly W48, Eurobird 9 and Hot Bird 2)	48° E
2. 2000-019A	Eutelsat 16C telecommunications satellite (formerly SESAT 1)	14.5° E
3. 2000-028A	Eutelsat 36A telecommunications satellite (formerly W4)	36.1° E
4. 2001-011A	Eutelsat 28A telecommunications satellite (formerly Eurobird 1)	33.1° E
5. 2001-042A	Eutelsat 8 West A telecommunications satellite (formerly Atlantic Bird 2)	12.7 W
6. 2002-035A	Eutelsat 5 West A telecommunications satellite (formerly Atlantic Bird 3)	5° W
7. 2002-038A	Eutelsat Hot Bird 13A telecommunications satellite (formerly Hot Bird 6); redeployed and renamed Eutelsat 8 West C in 2013	7.5° E
8. 2002-040A	Eutelsat 12 West A telecommunications satellite (formerly Atlantic Bird 1)	12.5° W
9. 2003-043A	Eutelsat 31A telecommunications satellite (formerly Eutelsat 33A, Eurobird 3 and eBird)	30.8° E
10. 2004-008A	Eutelsat 7A telecommunications satellite (formerly W3A)	7° E
11. 2005-041B	Syracuse 3A telecommunications satellite	47° E
12. 2006-007B	Eutelsat 9A telecommunications satellite (formerly Eurobird 9A and Hot Bird 7A)	9° E
13. 2006-032A	Eutelsat Hot Bird 13B telecommunications satellite (formerly Hot Bird 8)	13° E
14. 2006-033B	Syracuse 3B telecommunications satellite	5° W
15. 2008-065A	Eutelsat Hot Bird 13C telecommunications satellite (formerly Hot Bird 9)	13° E
16. 2008-065B	Eutelsat 48D telecommunications satellite (formerly 28B, Eutelsat 48B and W2M)	48.1° E
17. 2009-008B	Eutelsat 3C telecommunications satellite (formerly Atlantic Bird 4A and Hot Bird 10) redeployed and renamed Eutelsat Hot Bird 13D in 2013	13° E
18. 2009-016A	Eutelsat 10A telecommunications satellite (formerly W2A)	10° E
19. 2009-065A	Eutelsat 36B telecommunications satellite (formerly W7)	35.9° E
20. 2010-069A	Eutelsat KA-SAT 9A telecommunications satellite (formerly KA-SAT)	9° E
21. 2011-051A	Eutelsat 7 West A telecommunications satellite (formerly Atlantic Bird 7)	7.3° W
22. 2011-057A	Eutelsat 16A telecommunications satellite (formerly W3C)	16° E
23. 2012-062B	Eutelsat 21B telecommunications satellite (formerly W6A)	21.5° E

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Orbital position</i>
24.	2012-069A	Eutelsat 70B telecommunications satellite (formerly W5A)	70.5° E
25.	2013-022A	Eutelsat 7B telecommunications satellite (formerly 3D and W3D)	7° E
26.	2013-044A	Eutelsat 25B telecommunications satellite (formerly EB 2A)	25.5° E
27.	2014-006B	Athena-Fidus telecommunications satellite	25° E
28.	2014-030A	Eutelsat 3B telecommunications satellite	3.1° E
29.	2015-039B	Eutelsat 8 West B telecommunications satellite	8° W

^a Bold font denotes new additions or amendments to table for 2015.

Table 3
French satellites still in orbit but no longer operational^a

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Orbit</i>
1.	1965-096A	Al experimental satellite (Astérix)	Low Earth orbit (LEO)
2.	1965-101A	FR-1 technological satellite	LEO
3.	1966-013A	Diapason D1 experimental satellite	LEO
4.	1967-011A	Diadème 1 experimental satellite	LEO
5.	1967-014A	Diadème 2 experimental satellite	LEO
6.	1971-071A	EOLE 1 (CAS-A) experimental data-collection satellite	LEO
7.	1974-101A	Symphonie 1 experimental telecommunications satellite	Geostationary Earth orbit (GEO)
8.	1975-010A	Starlette scientific satellite	LEO
9.	1975-077A	Symphonie 2 experimental telecommunications satellite	GEO
10.	1983-058A	Eutelsat I-F1 (ECS 1) telecommunications satellite (European Space Agency (ESA))	GEO
11.	1984-081A	Eutelsat I-F2 (ECS 2) telecommunications satellite (ESA)	GEO
12.	1984-081B	TELECOM 1A telecommunications satellite	GEO
13.	1985-035B	TELECOM 1B telecommunications satellite	GEO
14.	1986-019A	SPOT 1 Earth observation satellite (deorbiting manoeuvres effected in November 2003 to lower the satellite's perigee to below 600 km with a view to achieving re-entry within 25 years)	LEO

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Orbit</i>
15.	1987-078B	Eutelsat I F4 (ECS 4) telecommunications satellite	GEO
16.	1988-018B	TELECOM 1C telecommunications satellite	GEO
17.	1988-063B	Eutelsat I-F5 (ECS 5) telecommunications satellite (ESA)	GEO
18.	1988-098A	TDF 1 live television satellite	GEO
19.	1990-005A	SPOT 2 Earth observation satellite (final deorbiting manoeuvres effected on 29 July 2009 to lower the satellite's perigee to below 600 km with a view to achieving re-entry within 25 years)	LEO
20.	1990-063A	TDF 2 live television satellite	GEO
21.	1990-079B	Eutelsat II-F1 telecommunications satellite	GEO
22.	1991-003B	Eutelsat II-F2 telecommunications satellite	GEO
23.	1991-050E	Satellite for Amateur Radio Astronomy (SARA)	LEO
24.	1991-083A	Eutelsat II-F3 telecommunications satellite	GEO
25.	1991-084A	TELECOM 2A telecommunications satellite	GEO
26.	1992-021A	TELECOM 2B telecommunications satellite	GEO
27.	1992-041B	Eutelsat II-F4 telecommunications satellite	GEO
28.	1992-052C	S80/T technological satellite	LEO
29.	1993-031B	ARSENE amateur radio satellite (perigee ~17 000 km)	Geostationary transfer orbit (GTO)
30.	1993-061A	SPOT 3 Earth observation satellite (orbit >800 km)	LEO
31.	1993-061B	STELLA scientific satellite (800 km)	LEO
32.	1995-016B	Hot Bird 1 telecommunications satellite (Eutelsat II F6)	GEO
33.	1995-033A	Helios 1A observation satellite (deactivated in February 2012 following deorbiting manoeuvres)	LEO
34.	1995-033B	Cerise research satellite (orbit ~600 km)	LEO
35.	1995-067A	TELECOM 2C telecommunications satellite	GEO
36.	1996-044B	TELECOM 2D telecommunications satellite (deactivated in November 2012 following deorbiting manoeuvres)	GEO
37.	1997-049A	W75 telecommunications satellite (formerly Eurobird 4, Hot Bird 3) (deactivated in July 2011 following deorbiting manoeuvres)	GEO
38.	1998-013A	Eutelsat 16B telecommunications satellite (formerly Eurobird 16, Hot Bird 4)	GEO

No.	Registration number	Satellite	Orbit
39.	1998-017A	SPOT 4 Earth observation satellite, 820 km sun-synchronous orbit (ceased operating on 29 June 2013)	LEO
40.	1998-056A	Eutelsat W2 telecommunications satellite (deactivated in March 2010 following deorbiting manoeuvres)	GEO
41.	1998-057A	Eutelsat 25A telecommunications satellite (formerly Eurobird 2, Hot Bird 5), redeployed and renamed Eutelsat 4B in 2013 (deactivated in September 2013 following deorbiting manoeuvres)	GEO
42.	1999-018A	Eutelsat 21A telecommunications satellite (formerly W6, W3), redeployed and renamed Eutelsat 48C in 2013 (retired from service on 9 November 2014)	GEO
43.	1999-064A	Helios 1B space observation satellite (withdrawn from service on 21 October 2004 with a perigee of ~630 km)	LEO
44.	1999-064B	Clémentine experimental satellite (perigee ~ 600 km)	LEO
45.	2000-052A	Eurobird 4A telecommunications satellite (formerly W1) (deactivated in February 2012 following deorbiting manoeuvres)	GEO
46.	2001-055A	French-American Jason-1 oceanography satellite, orbit inclined at 66° (mission ended on 3 July 2013)	LEO
47.	2002-021A	SPOT 5 Earth observation satellite (820 km sun-synchronous orbit)	LEO
48.	2002-021B	IDEFIX amateur radio satellite (attached to 3rd stage of Ariane 4-V151 launcher; orbit ~ 800 km)	LEO
49.	2002-051A	Eutelsat 70A telecommunications satellite (formerly W5); redeployed and renamed Eutelsat 25C in 2013, then Eutelsat 33B	GEO
50.	2004-025C	DEMETER scientific microsatellite (scientific use terminated in December 2010; deactivated in February 2011; orbit 650 km)	LEO
51.	2004-049C	Essaim 1 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010, re-entry in less than 25 years)	LEO
52.	2004-049D	Essaim 2 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010, re-entry in less than 25 years)	LEO
53.	2004-049E	Essaim 3 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010, re-entry in less than 25 years)	LEO
54.	2004-049F	Essaim 4 satellite for characterization of Earth's electromagnetic environment (ceased operating in October 2010, re-entry in less than 25 years)	LEO

<i>No.</i>	<i>Registration number</i>	<i>Satellite</i>	<i>Orbit</i>
55.	2004-049G	Polarization and Anisotropy of Reflectances for Atmospheric Sciences coupled with Observations from a Lidar (PARASOL) microsatellite for characterization of the radiative and microphysical properties of clouds and aerosols; 700 km polar orbit (ceased operating on 18 December 2013)	LEO
56.	2006-063A	Convection, Rotation and Planetary Transits (COROT) satellite for the study of stars and exoplanet detection (end of lifetime on 17 June 2014)	LEO
57.	2009-008C	Spirale A experimental satellite (deactivated early 2011)	GTO
58.	2009-008D	Spirale B experimental satellite (deactivated early 2011)	GTO
59.	2010-028A	Picard microsatellite for solar research (end of lifetime on 4 April 2014)	LEO
60.	2010-056A	Eutelsat W3B telecommunications satellite (failed launch into geostationary orbit; remains in GTO)	GTO

^a Bold font denotes new additions to table for 2015.