



**Secretariat**

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

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

**Letter dated 11 August 2003 from the Head of the Legal  
Department of the European Space Agency to the Secretary-  
General**

In conformity with the Convention on Registration of Objects Launched into Outer Space,\* to which the European Space Agency has acceded, the European Space Agency has the honour to transmit information on the launching of the Artemis, Envisat, MSG-1, Integral and Mars Express satellites (see annex).

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\* General Assembly resolution 3235 (XXIX), annex.



## Annex

### Registration of objects launched into outer space\*

#### Advanced Relay and Technology Mission (Artemis) satellite

Name of space object:	Advanced Relay and Technology Mission (Artemis) satellite
Name of launching authority:	European Space Agency
Date of launch:	12 July 2001
	Because of a malfunction of the launch vehicle, the Artemis satellite was initially placed in an incorrect orbit. The satellite was brought to its nominal orbital position on 31 January 2003.
Location of launch site:	Kourou, French Guiana
Orbital parameters:	
Apogee:	36,000 kilometres
Perigee:	36,000 kilometres
Inclination:	0 degrees
Period:	Not applicable
Position on the geostationary orbit:	21.5 degrees East
General description of the space object:	Artemis covers several advanced communication applications. The satellite acts as a data relay for Earth orbiting satellites. It also carries new communication services for mobile communications in the L-band and for navigation signal enhancement. As a demonstration satellite, it is also used to test new technologies, in particular an electric propulsion system and the Semiconductor Laser Inter-satellite Link (SILEX).
Frequency plan:	
Earth-to-space:	29887 MHz (telecommand/tracking nominal) 2026.754 MHz (telecommand/tracking backup) 28600-29800 MHz (data channels) 14240 MHz (data channel) 1631.5-1660.5 MHz (data channels) 13875 MHz (data channel)
Space-to-Earth:	20086 MHz (telemetry/tracking nominal) 19950 MHz (telemetry) 20110 MHz (beacon) 2201 MHz (telemetry/tracking backup)

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

	18100-19350 MHz (data channels)
	12740 MHz (data channel)
	1530-1559 MHz (data channels)
	12748 MHz (data channel)
	1575.42 MHz (data channel)
Space-to-space:	
Reception:	2255 MHz (data channel) 25500-27500 MHz (data channels)
Transmission:	2076.48 MHz (data channel) 23175-23535 MHz (data channels) 23540 MHz (beacon) 23545 MHz (beacon)
Nominal lifetime:	10 years

### **Environmental satellite (Envisat)**

Name of space object:	Environmental satellite (Envisat)
Name of launching authority:	European Space Agency
Date of launch:	28 February 2002 (1 March 2003 GMT)
Location of launch site:	Kourou, French Guiana
Orbital parameters:	
Apogee:	800 kilometres
Perigee:	800 kilometres
Inclination:	98.5 degrees
Period:	102 minutes
Position on the geostationary orbit:	Not applicable
General description of the space object:	The Envisat mission carries 10 different instruments dedicated to the observation of the Earth's surface and atmosphere. The instruments operate over a wide band of the electromagnetic spectrum, ranging from radio frequencies in the L-band to the ultraviolet. Beside the possibility for direct down-link of the data, Envisat is also able to use data relay satellites.
Frequency plan:	
Earth-to-space:	2048.8542 MHz (telecommand/tracking)
Space-to-Earth:	2225 MHz (telemetry/tracking) 8100 MHz (data) 8200 MHz (data) 8300 MHz (data) 26850 MHz (data relay) 3200 MHz (altimeter 1)

5331 MHz (synthetic radar)  
13575 MHz (altimeter 2)

Nominal lifetime: Greater than five years

### **Meteosat Second Generation (MSG-1) satellite**

Name of space object: Meteosat Second Generation (MSG-1)

Name of launching authority: European Space Agency

Date of launch: 28 August 2002

Location of launch site: Kourou, French Guiana

Orbital parameters:

- Apogee: 36,000 kilometres
- Perigee: 36,000 kilometres
- Inclination: 0 degrees
- Period: Not applicable
- Position on the geostationary orbit: 0 degrees East

General description of the space object: The Meteosat Second Generation (MSG-1) is the first of a series of three identical geostationary satellites that are to be placed at 0 degrees East (MSG-1), 10 degrees East (MSG-2) and -10 degrees East (MSG-3). The instruments carried by the spacecraft provide meteorological observations for nowcasting, short-range forecasting, numerical weather prediction and climate applications over Europe and Africa. In addition to the payloads for meteorological applications, the satellite also carries a search and rescue payload.

The satellite is operated by the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT).

#### Frequency plan:

Earth-to-space:

- 2067.7313 MHz (telecommand/tracking)
- 2068.6521 MHz (telecommand/tracking)
- 2069.5729 MHz (telecommand/tracking)
- 2070.4938 MHz (telecommand/tracking)
- 2101.5 MHz (data)
- 2106.5 MHz (data)
- 402.6 MHz (data collection platforms)
- 406.02 MHz (search and rescue)
- 406.022 MHz (search and rescue)
- 406.025 MHz (search and rescue)
- 406.028 MHz (search and rescue)
- 406.05 MHz (search and rescue)
- 406.08 MHz (search and rescue)

Space-to-Earth:	2245.5 MHz (telemetry/tracking) 2246.5 MHz (telemetry/tracking) 2247.5 MHz (telemetry/tracking) 2248.5 MHz (telemetry/tracking) 1675.281 MHz (images) 1686.833 MHz (images) 1691.000 MHz (images) 1695.150 MHz (images) 1544.5 MHz (search and rescue)
Nominal lifetime:	Greater than seven years

### **International Gamma-Ray Astrophysics Laboratory (Integral) satellite**

Name of space object:	International Gamma-Ray Astrophysics Laboratory (Integral) satellite
Name of launching authority:	European Space Agency
Date of launch:	17 October 2002
Location of launch site:	Baikonur, Kazakhstan
Orbital parameters:	
Apogee:	153,000 kilometres
Perigee:	10,000 kilometres
Inclination:	51.6 degrees
Argument of perigee:	300 degrees
Right ascension of the ascending node:	105 degrees
Period:	3 days
Position on the geostationary orbit:	Not applicable
General description of the space object:	Integral is an astronomy observatory designed to detect gamma rays. It provides high-resolution imagery for high-resolution line spectroscopy and the identification of gamma-ray sources.
Frequency plan:	
Earth-to-space:	2039.6458 MHz (telecommand/tracking)
Space-to-Earth:	2215 MHz (telemetry/tracking)
Estimated lifetime:	2.2 years (nominal) 5.2 years (extended)

## Mars Express

Name of space object: Mars Express  
Name of launching authority: European Space Agency  
Date of launch: 2 June 2003  
Location of launch site: Baikonur, Kazakhstan

### Orbital parameters:

Deep-space (category B) mission.

Transfer orbit to Mars according to the Hohmann trajectory with the following parameters:

State vector epoch: 2003/06/02  
Escape velocity: 2.97979 kilometres per second  
Declination: -5.4821 degrees

The probe will reach Mars in December 2003 and will be placed in a Mars orbit with the following parameters:

Apocentre: 11,500 kilometres  
Pericentre: 280 kilometres  
Inclination: 86 degrees  
Period: 7.5 hours

### General description of the space object:

Mars Express is a deep-space exploratory probe that will be placed in an orbit around Mars. It will perform detailed studies of the planet's surface, its subsurface structures and its atmosphere. It will also deploy Beagle 2, a small autonomous station that will land on the planet, study the planet's surface and look for possible signs of life.

### Frequency plan:

Earth-to-space: 7166.936 MHz (telecommand/tracking)  
2114.676 MHz (telecommand/tracking)  
Space-to-Earth: 8420.432 MHz (telemetry/tracking)  
2296.482 MHz (telemetry/tracking)

Estimated lifetime: 2.5 years (nominal)  
4.5 years (extended)

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