

# ESA Legal Framework and Competences

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# WHAT ARE THE LAWS OF SPACE ?

# The 1960s **space race** and the development of space law

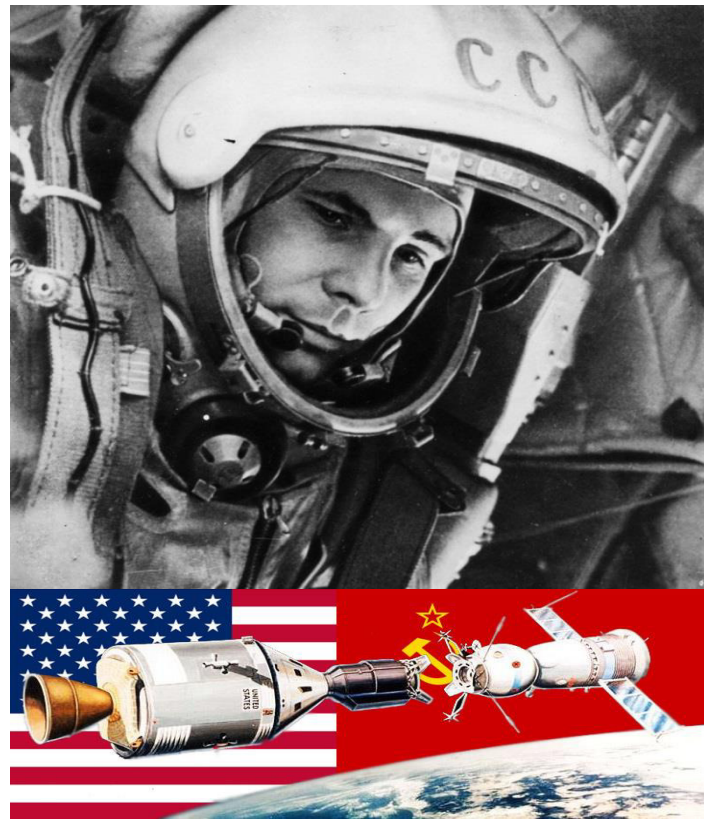
First human in space – J.A. Gagarin 12 April 1961

Kennedy's Moon Speech – May 1961

Climax of Cold War – Cuba Crisis 1962

A legal frame for space activities was required:

- **rule of law** for outer space activities
- drafted under **auspices of UN**
- possibly adopted by **consensus**
- to become legally **binding**
- of a **general character**



## Convention for the establishment of a European Space Agency

- Opened for signature 30 May 1975
- Entered into force 30 October 1980
- International treaty, 26 articles and five annexes
- ESA's founding instrument most important legal document

Purpose, activities and programmes  
Industrial policy  
Organs, financial and administrative set-up  
Treaty-technical articles





# ESA facts and figures

- Over 50 years of experience
- 22 Member States
- Eight sites/facilities in Europe, about 2300 staff
- 5.75 billion Euro budget (2017)
- Over 80 satellites designed, tested and operated in flight



## **The European Space Agency (ESA) is:**

- an international intergovernmental organization  
with legal personality including treaty-making power  
with competences transferred upon it by its member States
- a successful mechanism of international cooperation
- a space actor and recognized partner

... applying space law every day.

“To provide for and promote, for exclusively peaceful purposes, cooperation among European states in **space research** and **technology** and their **space applications**.”



## Article 2 of ESA Convention

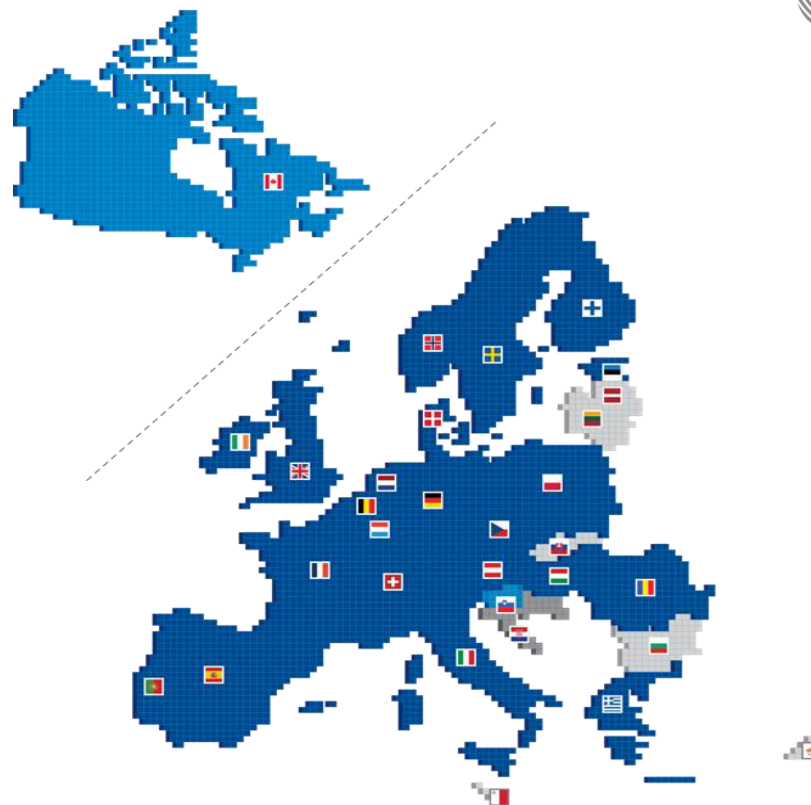


# Member States

**ESA has 22 Member States: 20  
States of the European Union:**

**(AT, BE, CZ, DE, DK, EE, ES, FI,  
FR, IT, GR, HU,  
IE, LU, NL, PT, PL, RO, SE, UK)**

**plus:  
Norway and Switzerland.**

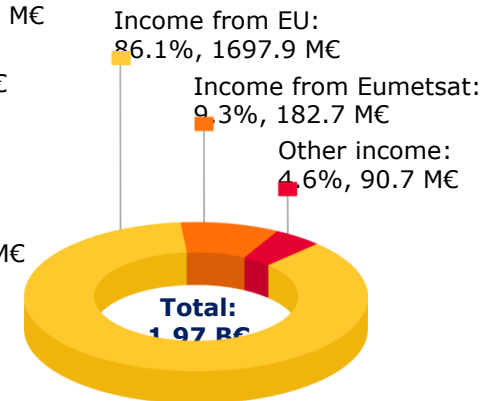
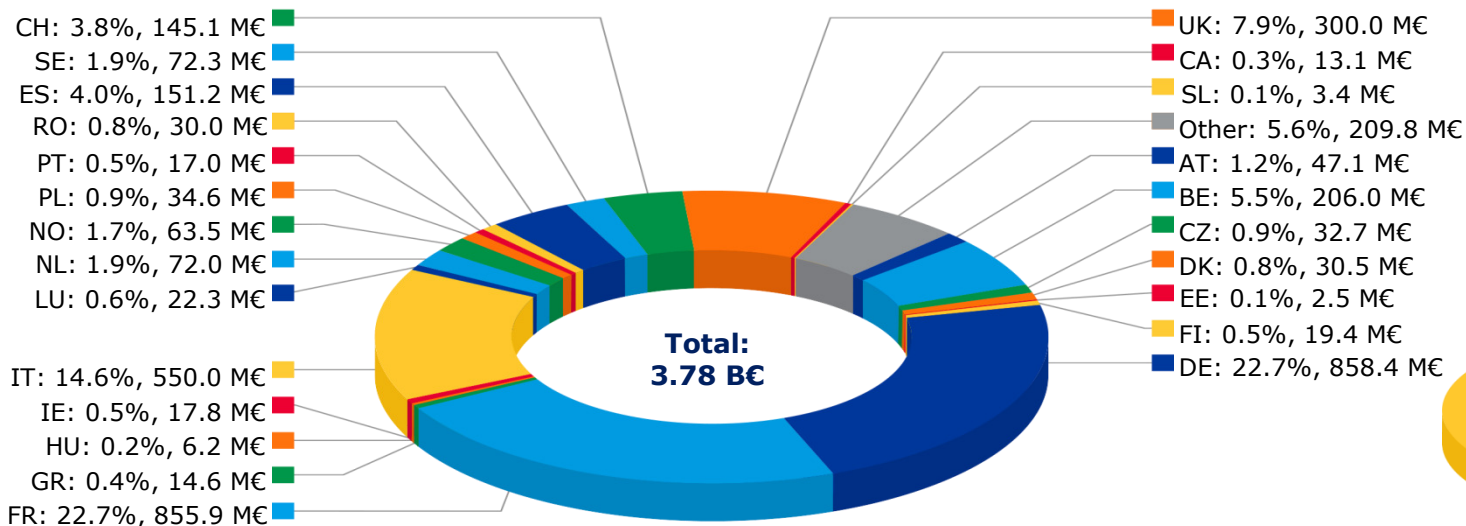


# ESA budget for 2017: 5.75 B€



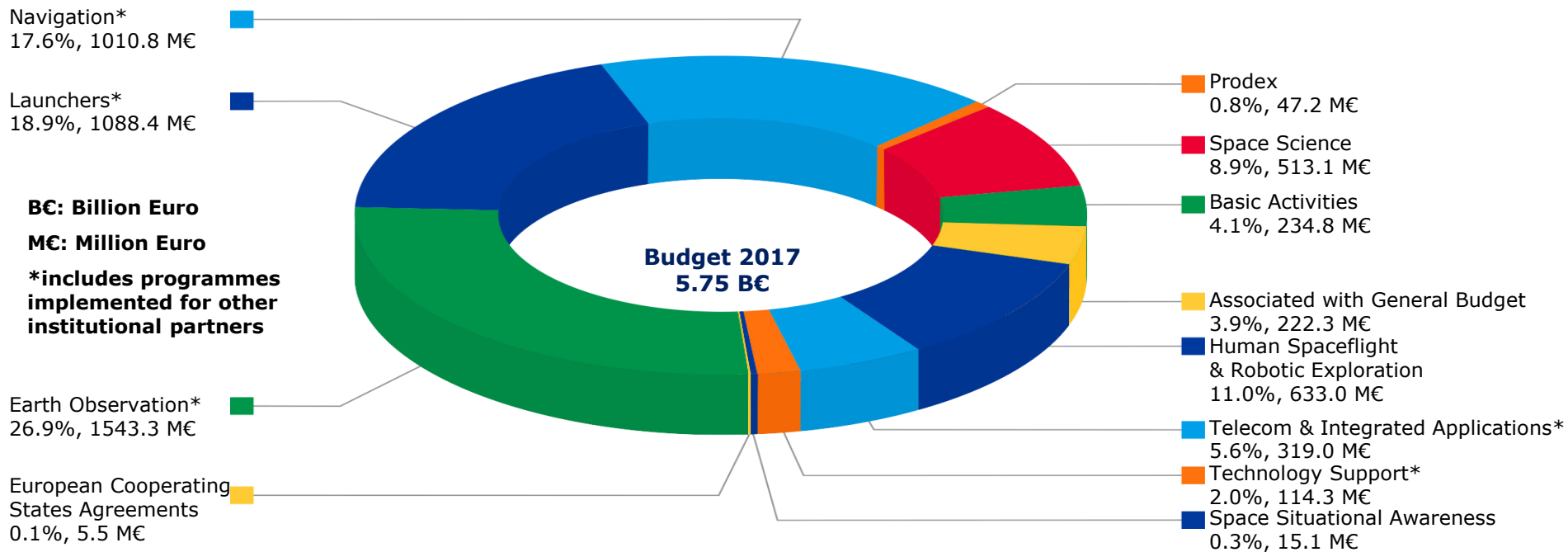
## ESA Activities and Programmes

## Programmes implemented for other institutional partners



**B€: Billion Euro    M€: Million Euro**

# ESA budget for 2017: by domain



- The Council is the governing body of ESA.
- It provides the basic policy guidelines for ESA's activities.
- Each Member State is represented on the Council and has one vote.
- Every two to three years, Council meets at ministerial level ('Ministerial Council') to take key decisions on new and continuing programmes and financial commitment.



**Decision making** in ESA bodies is mostly by majority voting

ONE State = ONE vote

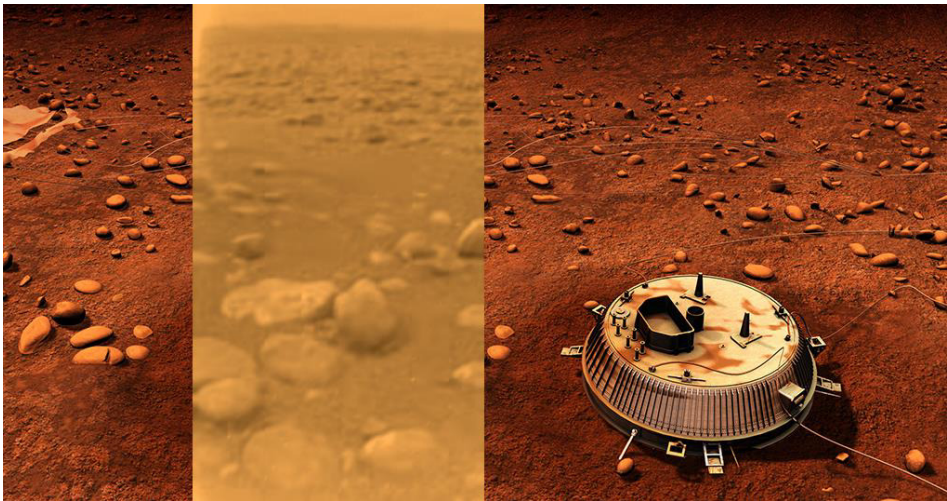
In Optional Programmes votes are calculated by adding weighted votes according to financial contributions per programme

Simple majority = Half of States + 50% of contributions

Double 2/3 majority = 2/3 of States + 66% of contributions

# MANDATORY

Are permanent



All Member States contribute on GNP scale to the funding

called Level of Agency’s resources (LOR) fixed by Council every 3 years



**Optional** = decided when needed by some States (a Member State may decide not to participate) funded through specific mechanisms ad-hoc

Each programme is an agreement of States, then entrusted to DG for its execution

States participate on variable level of financial contribution, on interest

Participation to a programme also by a non- Member State (Canada) or an International Organization



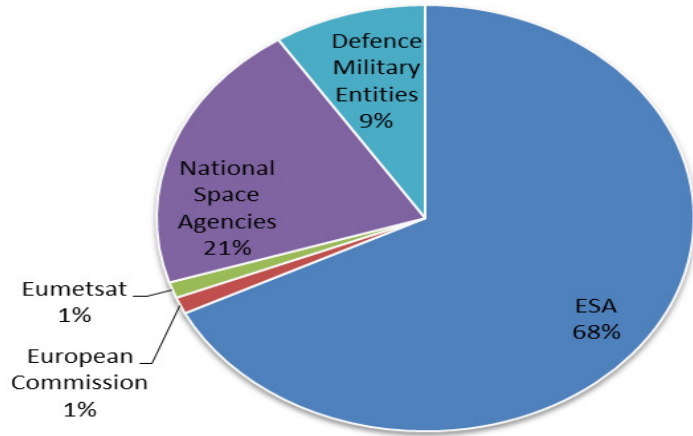


About 85% of ESA's budget is spent on contracts with European industry

## ESA's industrial policy:

- Ensures that Member States get a fair return on their investment;
- Improves competitiveness of European industry;
- Maintains and develops space technology;

- Institutional programmes promoted by European governments represent half of European industry's business: 52% in 2013 amounting to €3,5 billion
- ESA is the main procurement and development agency of the European space industry: 34% of industry sales, i.e. 68% of European institutional customers

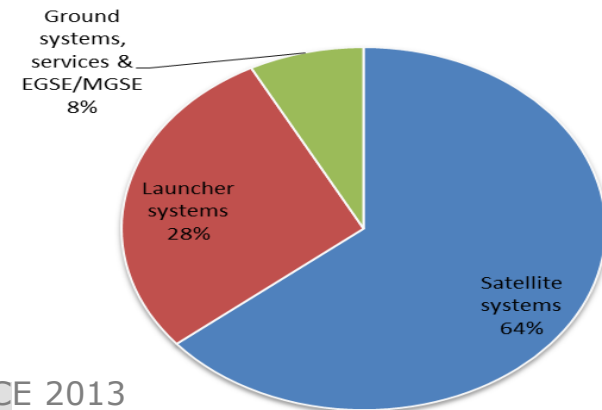


#### Details by procuring entity- European Institutional Programmes M €

ESA	2,395.00
European Commission	45.00
Eumetsat	43.00
National Space Agencies	732.00
Defence/military entities	326.00

- Commercial markets represent 46% of industry sales in 2013, worth in €3 Billion
- The **commercial satellite system segment**: total €1.90 billion
  - Telecommunications (mostly commercial customers): €1,70 billion
  - Earth observation and scientific systems: €0.22 billion
- The **operational launch systems segment**: total €0.85 billion
  - European industry sales to Arianespace: €0.85 billion
- The ground system and services segment: €0.23 billion

Commercial and export sales of the European space industry M €	
Complete satellite systems	1917
Complete launcher systems	846
Ground systems, services & EGSE/MGSE	230



# Strong ties all over the world

## Partnership: one of ESA's key words

ESA's international cooperation is driven by programmatic needs and rationale.

- **Strategic partnerships** with: USA, Russia and China.
- **Long-standing cooperation** with Japan, India, Argentina, Brazil, Israel, South Korea, Australia and many more...
- **EU Members, but not ESA Member States:** Bulgaria, Cyprus, Latvia, Lithuania and Slovakia. Cooperating State: Malta. Discussions are on going with Croatia. Slovenia is now an Associate Member.
- **Over 400 international agreements!**

## Policy coordination:

- Since 2004 the ESA/EU Framework Agreement has been the basis for cooperation between ESA and the EU.
- Article 189 of the Lisbon Treaty of 2009 gave mandate to the EU to develop a 'European' space policy, providing that it should establish appropriate relations with ESA.

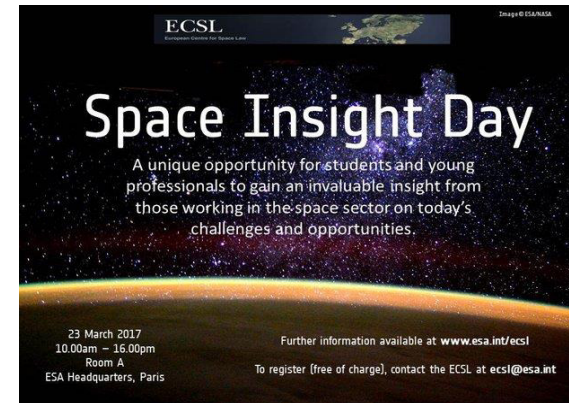
## EU/ESA space programmes and R&D activities:

- ESA is implementing two flagship programmes for the EU:
  - **Galileo**
  - **Copernicus**
- **Horizon 2020** – ESA provides support to the EU in its implementation of space research and technology objectives.
- **Defence and Space** – ongoing coordination between ESA, EC and EDA through different channels.



# ESA and International Space Law (1)

- ESA has long been an **active promoter and contributor** to the development of international space law.
- It founded the **European Centre for Space Law (ECSL)** in 1989 – an invaluable resource to space law education and awareness.
- It is a **permanent observer of the UNCOPUOS** Legal Subcommittee and actively participates during proceedings.



# ESA and International Space Law (2)

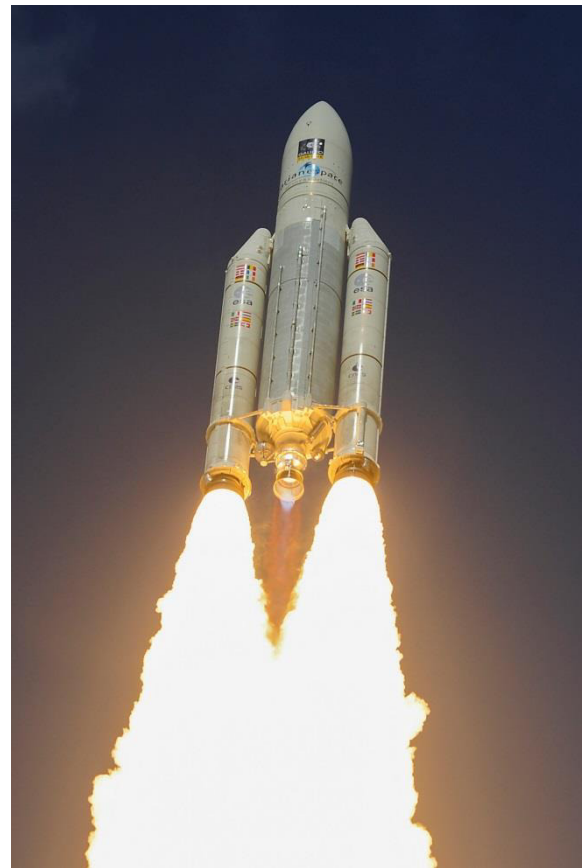
- As an international organisation, **ESA declared acceptance of:**
  - Rescue Agreement (1968)
  - Liability Convention (1972)
  - Registration Convention (1975)
- ESA developed internal frameworks owing to its international obligations relating to:
  - Liability for damage caused by space objects
  - Space debris mitigation
  - Space object registration



## Council “Resolution of the Council of the European Space Agency on the Agency’s Legal Liability” (1978)

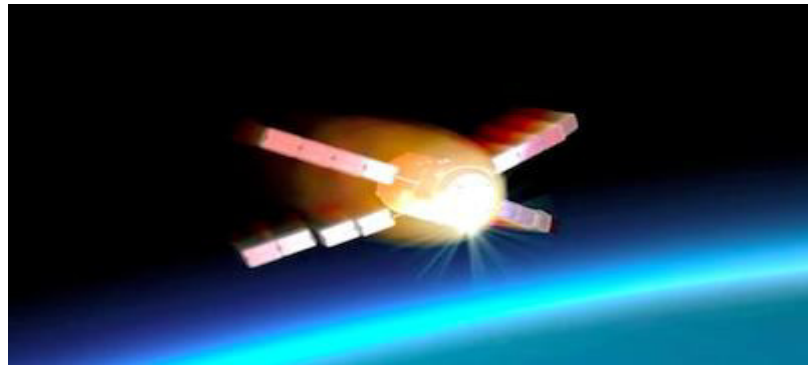
### Main Principles:

- If a claim is addressed to ESA, the Agency shall conduct the proceedings.
- If a claim is addressed to a Member State, the Agency may join the proceedings.
- There is a formula for internal (horizontal) regress, i.e. distribution of financial burden between ESA and its member States.



- UNITED NATIONS REGISTER OF OBJECTS LAUNCHED INTO OUTER SPACE
- # Registration of the Automated Transfer Vehicle (ATV)-4 (ESAReg0313)\*
- Note: \* This form is available from <http://www.unoosa.org/oosa/3OR/register/resources.html>. Please see annex for instructions and definitions. Completed forms should be filed by hardcopy through: Permanent Missions to UNOOSA, and electronically to [register@unoosa.org](mailto:register@unoosa.org)
- |  |   |   |  |
|--|---|---|--|
| <b>Part A - Information provided in conformity with the Registration Convention or General Assembly resolution 1721 (XV)</b> |   |   |  |
| <b>1</b> New registration of space object  | <b>2</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  | <b>3</b> Submitted under the Convention: ST/SGSR/E/XXXX   | <b>4</b> Check box: <input type="checkbox"/> |
| Additional information for previously registered space object (see below for reference sources)*                             | Submitted under resolution 1721E-AJAC.105INF. XXXXX   |   |  |
| <b>Launching State/State(s)/International intergovernmental organization(s)</b>  |   |   |  |
| <b>1</b> State of registry or inter alia intergovernmental organization(s)   | ESA*  |   |  |
| <b>2</b> Other launching State(s) (where applicable. Please see attached notes)*   | XXXXXX  |   |  |
| <b>3</b> State of registry can exist for a space object. Please see annex.*  |   | <b>4</b> Under the Registration Convention, only one State of registry can exist for a space object. Please see annex.* |  |
| <b>Designator</b>  |   |   |  |
| <b>1</b> Name  | Automated Transfer Vehicle 4 (ATV-4) Albert Einstein*   |   |  |
| <b>2</b> COSPAR international designator (see below for reference sources)*  | 2013-022A*  |   |  |
| <b>3</b> National designator/registration number as used by State of registry  | XXXXXX  |   |  |
| <b>Date and territory or location of launch</b>  |   |   |  |
| <b>1</b> Date of launch (hours, minutes, seconds optional)*  | 05/06/2013 05:00:37.777*  |   |  |
| <b>2</b> Territory or location of launch (see below for reference sources)*  | CSG, Kourou, French Guiana*   |   |  |
| <b>3</b> Time  | 21 hrs 52 min 11 sec  |   |  |
| <b>4</b> Coordinated Universal Time (UTC)*   | a   |   |  |
| <b>Basic orbital parameters at epoch 15 June 2013, 14:57:24 UTC (ATV-4 docked with ISS)*</b>                                 |   |   |  |
| <b>1</b> Nodal period  | 92.564 min/rev  |   |  |
| <b>2</b> Inclination   | 51.254 deg/rev  |   |  |
| <b>3</b> Apogee  | 427.59 km/rev   |   |  |
| <b>4</b> Perigee   | 407.20 km/rev   |   |  |
| <b>General functions</b>   |   |   |  |
| <b>1</b> General function of space object (if more space is required, please include text in separate UNOOSA document)*      | ATV-4 (Albert Einstein) is the low cost Automated Transfer Vehicle of ESA. The mission is to deliver 6.5 tons of resupply cargo and dock automatically with the International Space Station (ISS). After its launch on 6 June 2013, ATV-4 performed a ten-day approach phase before docking successfully with ISS on 15 June 2013. It can remain docked for up to 6 months before undocking, deorbiting and burning up in the Earth's atmosphere during its planned controlled re-entry.* |   |  |
| <b>2</b> <input type="checkbox"/>  |   |   |  |
| <b>Change-of-status</b>  |   |   |  |
| <b>1</b> Date of decay/entry/deorbit (in hours, minutes, seconds optional)*  | XXXXX min 00:00:00  |   |  |
| <b>2</b> <input type="checkbox"/>  | YY YY min 00:00:00  |   |  |
| <b>3</b> Coordinated Universal Time (UTC)*   |   |   |  |
| <b>Sources of information</b>  |   |   |  |
| <b>1</b> UN registration document  | <a href="http://www.unoosa.org/oosa/3OR/register/docs/ats4.html">http://www.unoosa.org/oosa/3OR/register/docs/ats4.html</a>   |   |  |
| <b>2</b> COSPAR in emotional data in tons  | <a href="http://isscsp4.esa.int/isscsp4.html">http://isscsp4.esa.int/isscsp4.html</a>   |   |  |
| <b>3</b> Global launch locations   | <a href="http://www.unoosa.org/oosa/3OR/register/docs/ats4.html">http://www.unoosa.org/oosa/3OR/register/docs/ats4.html</a>   |   |  |
| <b>4</b> Online Index of Objects Launched into Outer Space   | <a href="http://www.unoosa.org/oosa/3OR/register/docs/ats4.html">http://www.unoosa.org/oosa/3OR/register/docs/ats4.html</a>   |   |  |
- Y 09-87779 (E)\*
- \*0987779.fj

- **“Space Debris Mitigation For Agency Projects” (2014)**
- ESA technical requirements for space debris mitigation
- implementation principles and definition of internal responsibilities



# European Centre for Space Law (ECSL)

- The **ECSL** was founded in **1989** by the **European Space Agency** and today operates under the auspices of the **Agency's legal services department**.
- It operates on the basis of a **Charter** with the **main objectives** being:



- **ECSL Practitioners' Forum**
- **Young Lawyers' Symposium**
- **IISL-ECSL Colloquium** during the **UNCOPUOS Legal Subcommittee**
- **Manfred Lachs Moot Court Competition**
- **Summer Course on Space Law and Policy**
- **ECSL Student Essay Competition**
- **National events, e.g. business/industry events, colloquia & student Gatherings**
- **Publications, e.g. articles etc**

# Raising Awareness & Education: ECSL Summer Course on Space Law and Policy



# Hard Competition Manfred Lachs Moot Court

Each year the **ECSL** organizes, together with the **IISL**, the European Rounds of the Manfred Lachs Space Law Moot Court Competition.

Regional winners then compete in the World Finals which are held in conjunction with the annual **IAC**.





**The final of the Manfred Lachs Moot Court Competition** has the distinction of being judged by three sitting judges of the **International Court of Justice.**

# What will the next 50 years bring?



1962



2062

## Towards **space traffic management?**



# THANK YOU !

Marco Ferrazzani