



European Parliament
Committees

ITRE Industry, Research and Energy



#SPACE4.0

Jan Wörner
European Space Agency

ESA UNCLASSIFIED - For Official Use



European Space Agency



YESTERDAY: Race in Space



Lunochod



TODAY
Cooperation beyond earthly crises!

Global Challenges



- climate change
- migration
- mobility
- communication
- energy
- shortage of resources
- demographic development
- conflicts and catastrophes
- health
- ...curiosity



→ **Space4.0:**

information, innovation, interaction, inspiration...

Shift of paradigms!

- change of motivations
- change of actors
- change of contents
- change of roles
- change of technologies

→ **SPACE 4.0**

A white speech bubble with a tail pointing towards the dinosaurs below. Inside the bubble, the text 'MAKE A WISH!' is written in a simple, sans-serif font.

MAKE
A
WISH!

SPACE 4.0:

- Commercialisation
- Participation
- Information
- Innovation
- Interaction
- Inspiration
- Jobs & growth
- Digitalisation

society

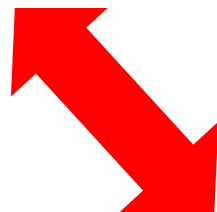
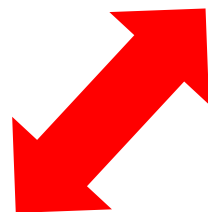
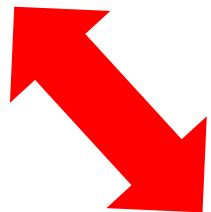
politics



SPACE 4.0



esa



science

industry





Citizens' debate on Space for Europe



ESA's Citizens' debate
22 countries
2000 participants
15-89 years old



First results



- Strong trust in space agencies (**83%**) and in the European Space Agency (**88%**)
- **91%** : Space = common good for humanity
- **75%** do not agree with the affirmation: “Space should be considered as an empty and not very relevant place”
- **78%** : Space = source for commerce, industry and economic development
- **96%** : Space = universe of possibilities and opportunities
- **84%** : Space = place to be protected from polluting and potentially harmful human activities
- **81%** : exploit natural resources from space





ESA: Agency and broker, mediator and enabler for space

Seamless Chain of Innovation



Invention → Missions → Innovation



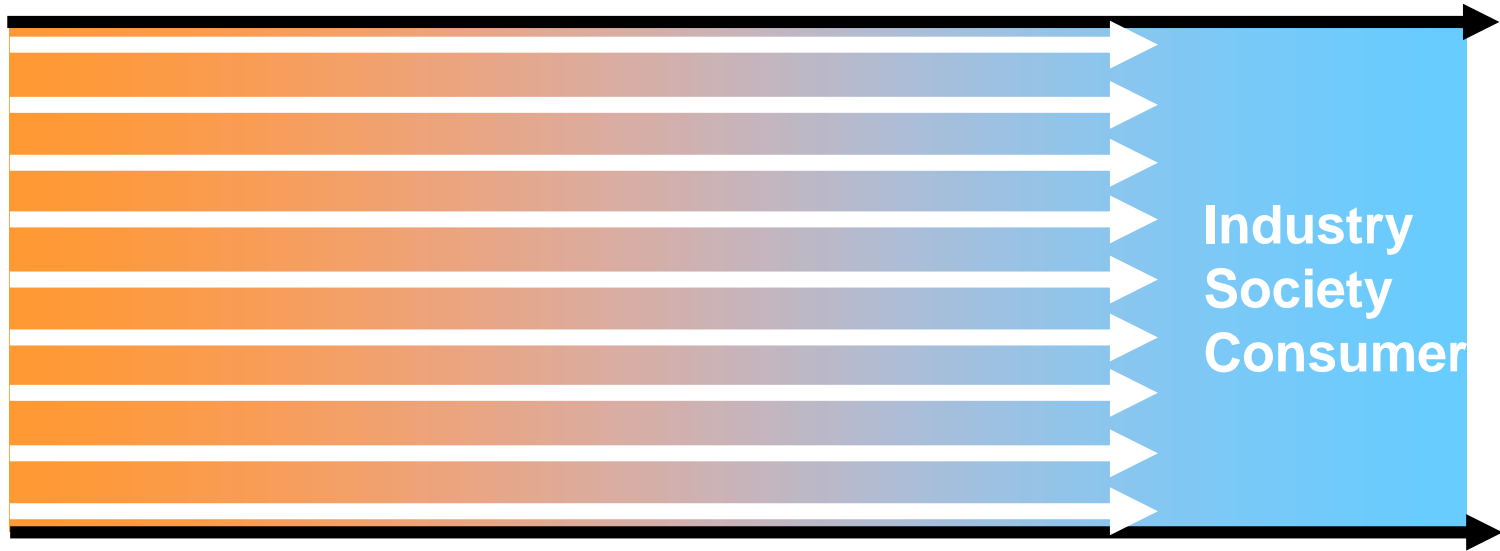
basic research applied research technology development projects missions market public appl.



Seamless Chain of Innovation



Invention → Missions → Innovation



basic
research

applied
research

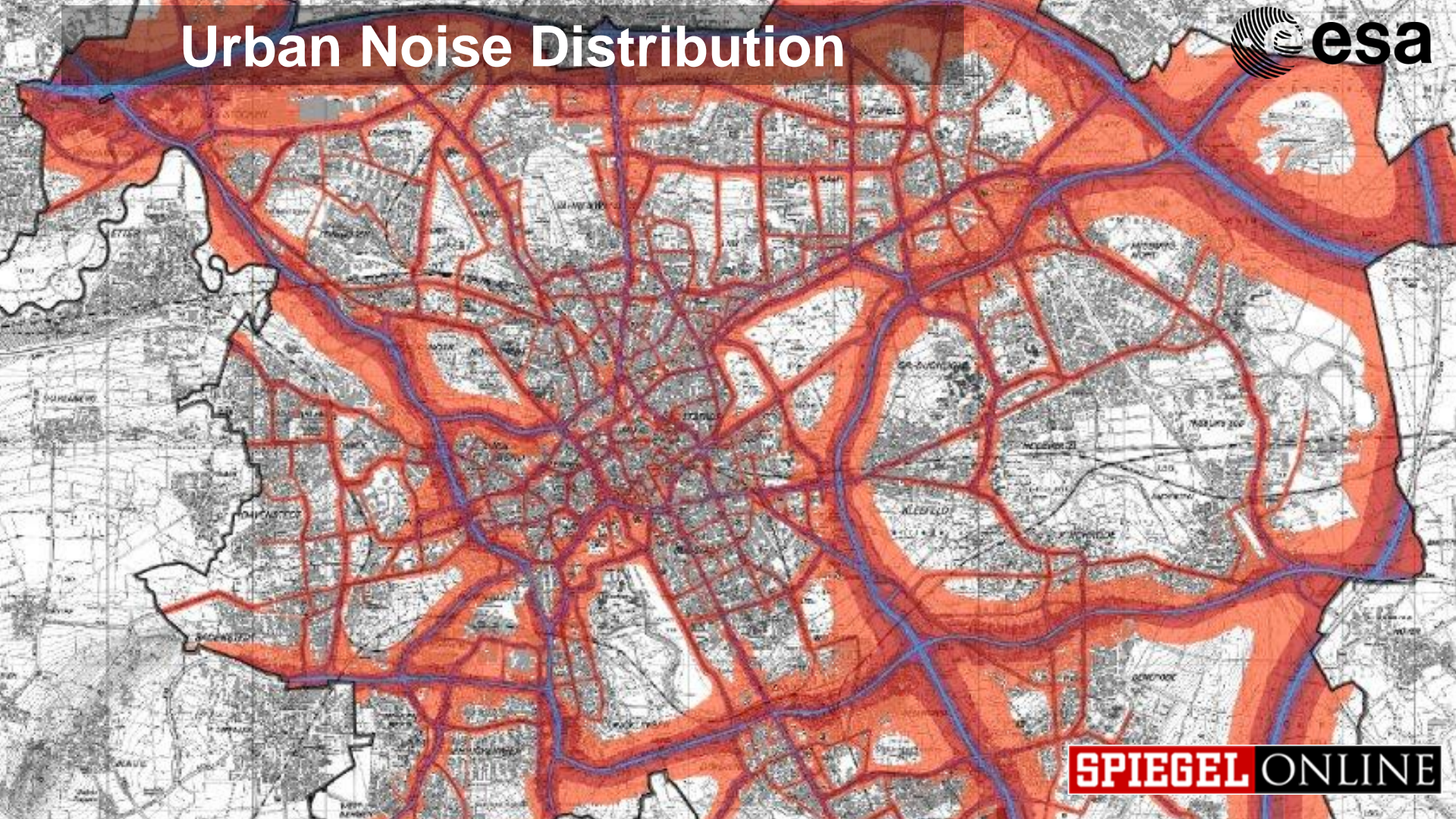
technology
development

projects
missions

market
public appl.



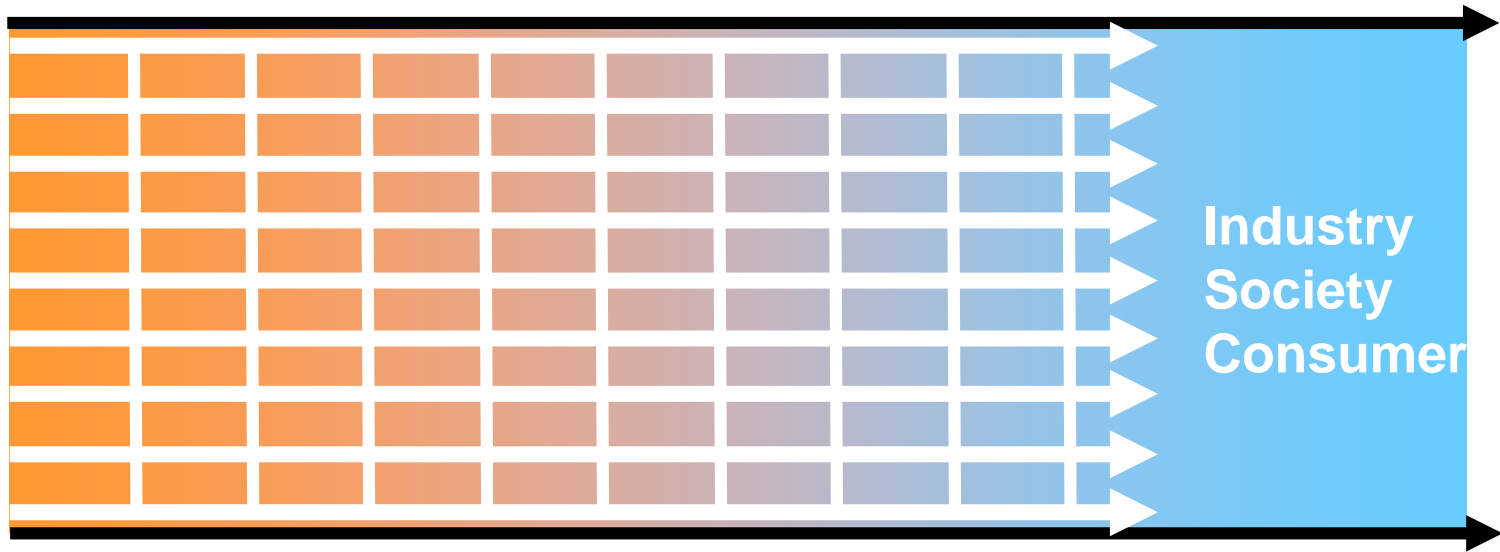
Urban Noise Distribution



Seamless Grid of Innovation



Invention → Missions → Innovation



basic
research

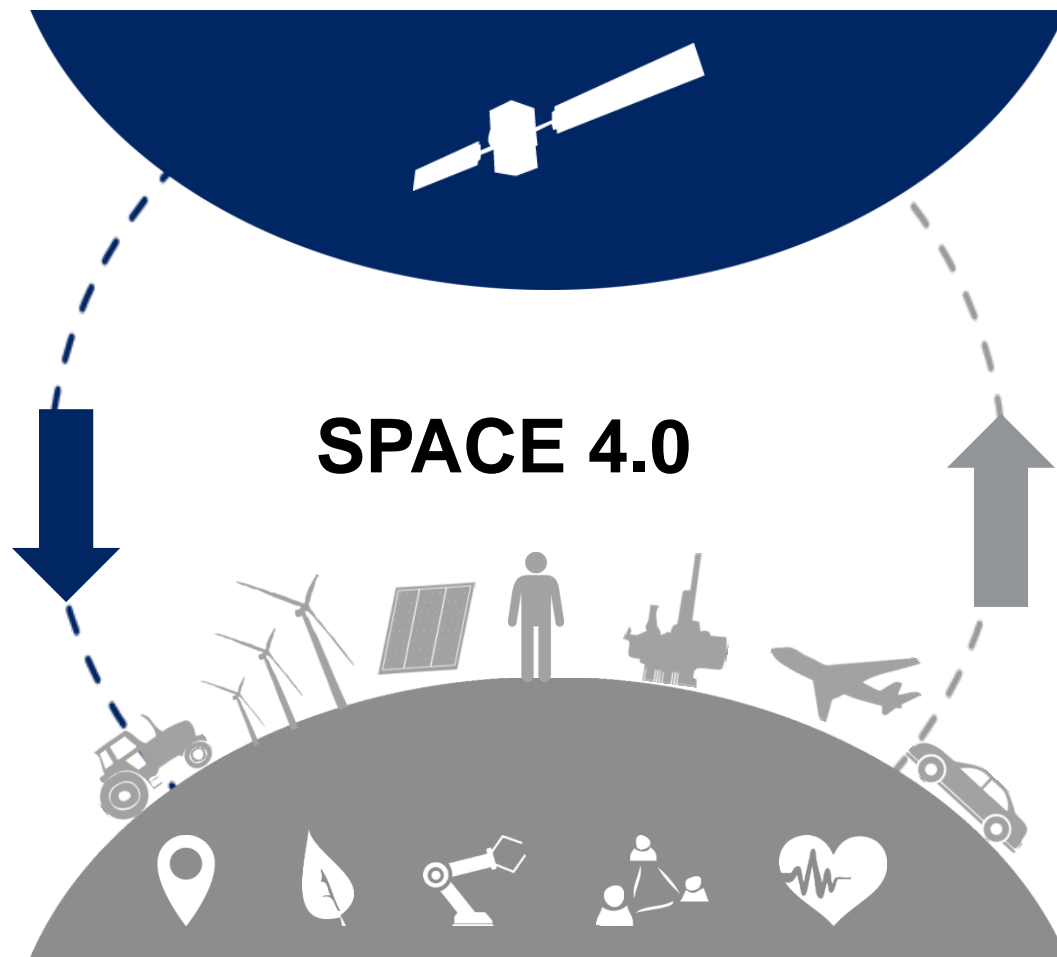
applied
research

technology
development

projects
missions

market
public appl.





Seamless Grid of Innovation



Invention → Missions → Innovation



basic
research

applied
research

technology
development

projects
missions

market
public appl.

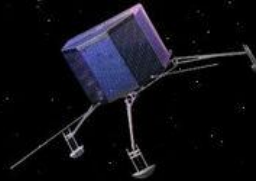
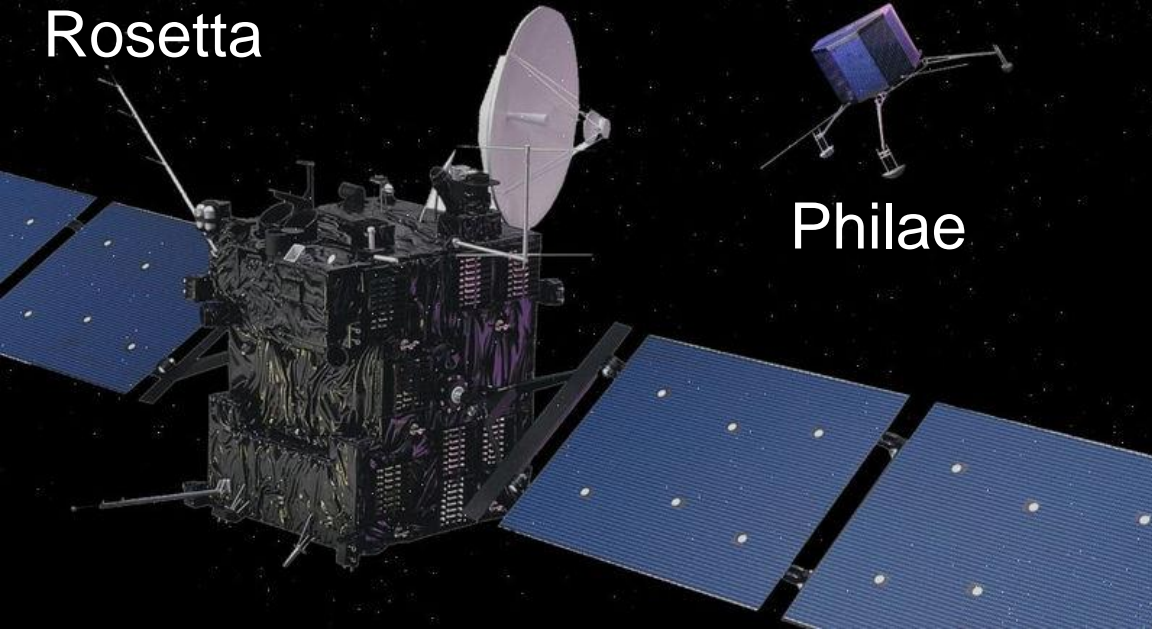


From Space to Environmental Protection



FireWatch → Early Forest Fire Detection

Rosetta



Philae



European Spirit...?



European Spirit!



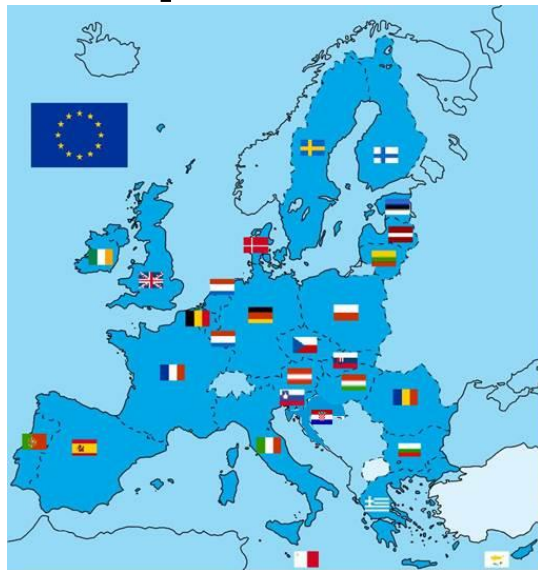
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TIM PEAKE

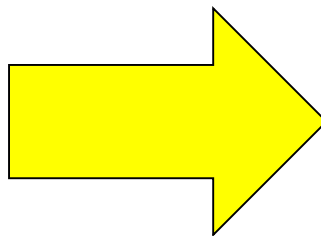
LA VIE DANS L'ESPACE

9th February 2016

European Union



United States of Europe

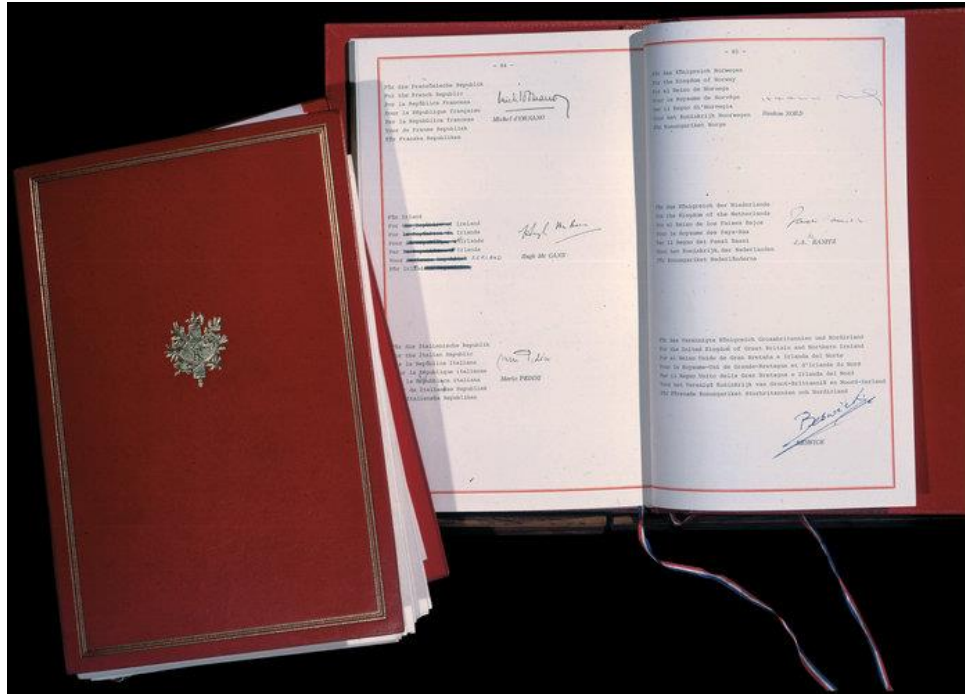


→ **United Space in Europe!**

MS



ESA Convention 1975...



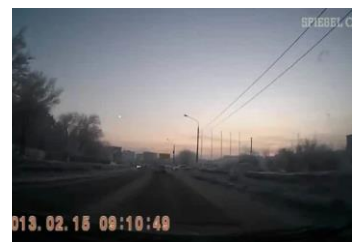
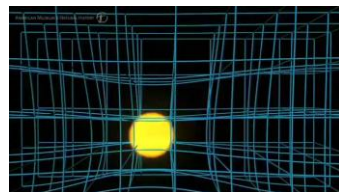
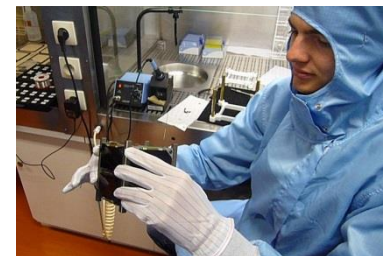
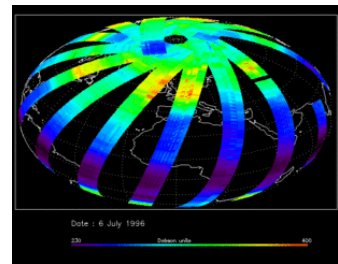


ESA Convention 1975:

„...to establish a single European space organisation...“

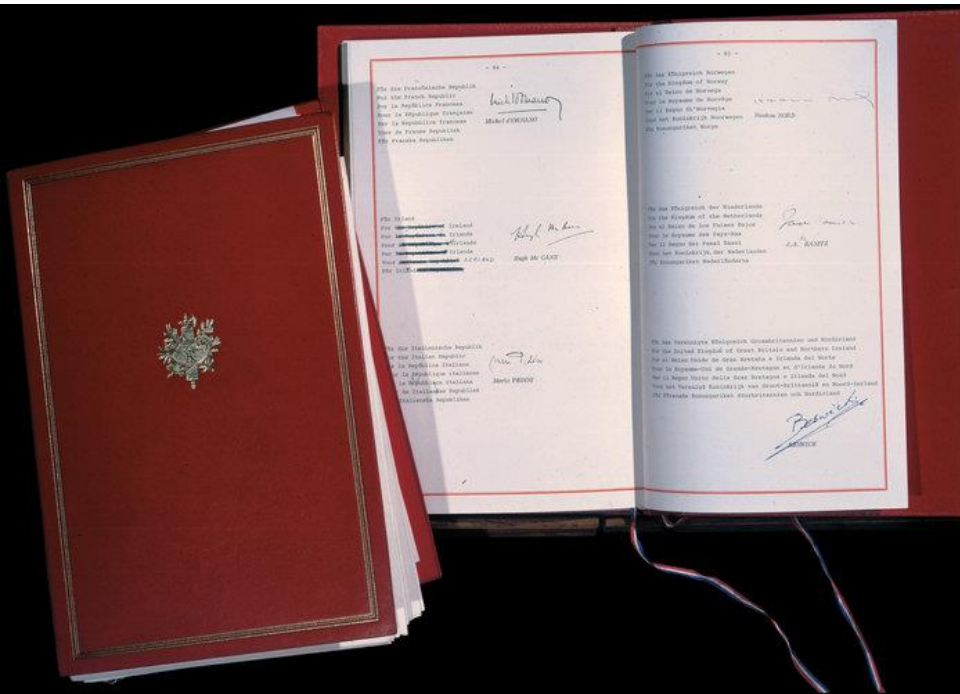


ESA 2016:



ESA Convention 1975

Lisbon Treaty 2007/2009



audiovisual service



The Lisbon Treaty

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Treaties

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Article 189

1. To promote scientific and technical progress, industrial competitiveness and the implementation of its policies, the Union shall draw up a European space policy. To this end, it may promote joint initiatives, support research and technological development and coordinate the efforts needed for the exploration and exploitation of space.



2. To contribute to attaining the objectives referred to in paragraph 1, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish the necessary measures, which may take the form of a European space programme, excluding any harmonisation of the laws and regulations of the Member States.


3. The Union shall establish any appropriate relations with the European Space Agency.


4. This Article shall be without prejudice to the other provisions of this Title.

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Common European Goals

Joint statement EU-ESA

 **esa** specific
ESA-objectives

 specific
EU-objectives

programmes/projects



 programme implementation



European Space Agency

Discover what space



Joint Statement

- Three goals
 - integration of space
 - European competitiveness
 - European autonomy
- Framework agreement
 - complementary strengths
 - cooperation
 - Space Council



Common European Goals

European identity, spirit and cohesion

Joint statement EU-ESA

**Integration of space
into European society
and economy**

**Globally competitive
European space
sector**

**European autonomy in
accessing and using
space**



specific
ESA-objectives



specific
EU-objectives

programmes/projects



programme implementation



**EU objectives:
SPACE
STRATEGY
FOR EUROPE**
#EUSpaceStrategy



**ESA objectives:
DG's Proposal for CM16:**



European Space Agency



space 4.0

United Space in Europe

The central graphic features a globe of Earth at its core, surrounded by several concentric, multi-colored rings (orange, yellow, green, blue, purple) that resemble a target or a futuristic interface. The rings are set against a dark background with a starry space pattern. The text 'space 4.0' is prominently displayed in white over the globe, and 'United Space in Europe' is written in a larger white font below it. The words 'interact', 'innovate', and 'inform' are repeated in various colors and orientations around the perimeter of the rings, suggesting a multi-lingual or multi-cultural theme.

Common European Goals

European identity, spirit and cohesion

Joint statement EU-ESA

**Integration of space
into European society
and economy**

**Globally competitive
European space
sector**

**European autonomy in
accessing and using
space**



specific
ESA-objectives
→ **ESA CM16 2 Dec.**



specific
EU-objectives
→ **EC Communication 26 Oct.**

programmes/projects



programme implementation



A dark, star-filled background with a white lowercase letter 'i' centered on the right side. The stars are of various colors and sizes, creating a dense field of light points against the black space.

i

ESA: THE European Space Agency



THE European Space Agency