

31st IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3)  
Interactive Presentations - 31st IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND  
ECONOMICS (IP)

Author: Mr. Florent Piponnier  
ESA, France

Mrs. Jessica Delaval  
ESA, France

Mrs. Marion Mirailles  
ESA, France

Mrs. Luise Clemens  
European Space Agency (ESA), France

REGULATION AS A LEVER OF SUCCESS OF ECO-EFFICIENCY AND SUSTAINABILITY IN THE  
SPACE SECTOR

**Abstract**

The role that the space sector plays in Earth observation makes it a major contributor to our understanding of our planet's system; its weather, climate, oceans, geology, natural resources, etc. So it is both essential and vital to even better predict, adapt and mitigate the global challenges our civilisation and planet are facing. On the other hand, the space sector, through the nature of its core activities, like all human activities, has an impact on the environment. Indeed, it consumes non-renewable resources, energy or water, emits polluting gases, generates waste and space debris and uses hazardous materials. In this context, UNISPACE+50 aims to elaborate a comprehensive Space2030 agenda for the contribution of space activities to the achievement of the Sustainable Development Goals that should offer a large scope of potential actions to be taken by all actors in the space sector. Indeed, there is an increasing necessity to develop an operational, harmonised and standardised approach in the sector towards more ethics and sustainability. The challenges we are thus facing, regarding environmental, economic and social issues should become an opportunity to develop a new paradigm in our sector. To that end, high level international guidelines, visions, treaties or regulations need to show some specificities – geographical, methodological, technical or economic – to reach reasonable efficiency levels.

In this presentation we would like to show,

- What the identified factors are in international regulation that encourage or limit efficiency in sustainability and eco-innovation in the space sector;
- How the space sector deals with the limits of the regulation to retain its integrity and efficiency;
- How we could draw our inspiration from the current treaties and regulations to elaborate an environmental corpus of agreements and regulations that will drive the space sector in the next decades to tackle the environmental issues cited previously.

We will base our reflection on 3 cases:

- the REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) regulation, in the European Union, that regulates the use of substances of very high concern and its implications in the space sector;
- the space debris challenge, identified since the 1970s and on which the space sector is working to mitigate and remediate it;
- the eco-design for space missions. Environmental regulations exist in many countries for all sectors. The space sector, still working on applying these regulations and harmonising good practices, sometimes

goes further to tackle global environmental issues.