

19th IAA SYMPOSIUM ON SPACE DEBRIS (A6)
Political, Legal, Institutional and Economic Aspects of Space Debris Mitigation and Removal - STM
Security (8-E9.1)

Author: Ms. Emmanuelle David
Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland, emmanuelle.david@epfl.ch

Mr. Romain Buchs
Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland, romain.buchs@epfl.ch
Mrs. Marie-Valentine Florin
Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland, marie-valentine.florin@epfl.ch
Prof. Jean-Paul Kneib
Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland, jean-paul.kneib@epfl.ch

SPACE DEBRIS RISK GOVERNANCE: PROCEEDINGS FROM A WORKSHOP HELD AT EPFL IN
2021

Abstract

There is growing concern that the current mitigation to space debris risks in low Earth orbit is not sustainable. Ongoing changes in the space economy and its growth prospect have the potential to exacerbate the problem. In 2019, the EPFL Space Center (eSpace) in Lausanne, Switzerland, started a research initiative on Sustainable Space Logistics. The initiative engages international communities around specific projects, by federating and coordinating research across Switzerland, and including industry actors and Space agencies as key partners. In February 2021, EPFL has organised the first online Sustainable Space Logistics Symposium. In May 2021, the EPFL International Risk Governance Center (IRGC), will co-organise with eSpace an international, interdisciplinary and multistakeholder workshop about the governance of space debris-related risks, with the purpose to enhance the collaboration between science, industry and policymaking.

The objectives of the workshop are to:

- Support policymakers and other decision-makers in business to evaluate the extent to which space debris risks in LEO are tolerable (with current mitigation measures) or whether they should be addressed differently. If so, how and at what level (technical industry standards, certification, domestic regulation, international collaboration for governance/regulatory arrangements)?
- Identify possible knowledge and communication gaps between space debris experts and others, and needs/challenges that are still to be addressed at technical and governance levels by:
 - fostering further specific research tailored to policy needs (e.g., on cost constraints)
 - raising awareness around the issue of space debris in larger policymaking circles and in society
 - fuelling evidence-based discussion among policymakers that takes into account business and economic perspectives
 - strengthening data and information sharing.
- Develop stylised scenarios for the future of near-Earth space to increase awareness and preparedness.
- Review existing and possibly elaborate new policy recommendations.

IRGC's approach to risk governance focuses on systemic risks marked by complexity, uncertainty and ambiguity, that cascade within and between systems, including the space ecosystem, the economy

and society at large. The workshop will help policymakers and other decision-makers make sense of the situation (e.g., that a number of new space actors are investing in satellite operations in LEO despite the risk), by reviewing evaluations of the severity of and tolerance to the risk, and various approaches to deal with the problem, now and for the future.

The paper will present the outcome of the February and May 2021 events, co-organised by eSpace and the IRGC Centers at EPFL, on the topic of governance of space debris risks.