

## From pixels to policies: charting a path for responsible data governance in Earth Observation

In this research is presented a study of satellite data governance for Earth Observation (EO) satellites. Since EO satellites proliferate, sensitive data regarding terrestrial observations has become more accessible than ever, necessitating robust security measures and anonymization protocol protocols to protect privacy. Accessing and sharing collected data in this field requires seamless international cooperation.

Earth observation, as defined by the United Nations Working Group on Remote Sensing of the Earth by Satellites, refers to the use of space platforms to observe, measure, and characterize phenomena on, above, and below the earth's surface. Data obtained by EO satellites exhibit high-quality images and dimensions across spatial, spectral, and temporal domains, posing pertinent questions regarding their access, transfer, and use as evidence.

The EO actors landscape includes institutions at national and European levels, as well as private operators such as SpaceX, Blue Origin, and Virgin. While EO data utilization has many benefits, it must be considered in light of its implications for peaceful use of Outer Space as well. Satellite imagery resolution profoundly influences military-security dynamics, underscored by new research on the intricate nexus between EO data and military-security dynamics. Using an interdisciplinary approach, this study contributes to the development of frameworks that balance privacy protection, international cooperation, and peaceful exploration of space.

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