ITU initiatives on space sustainability

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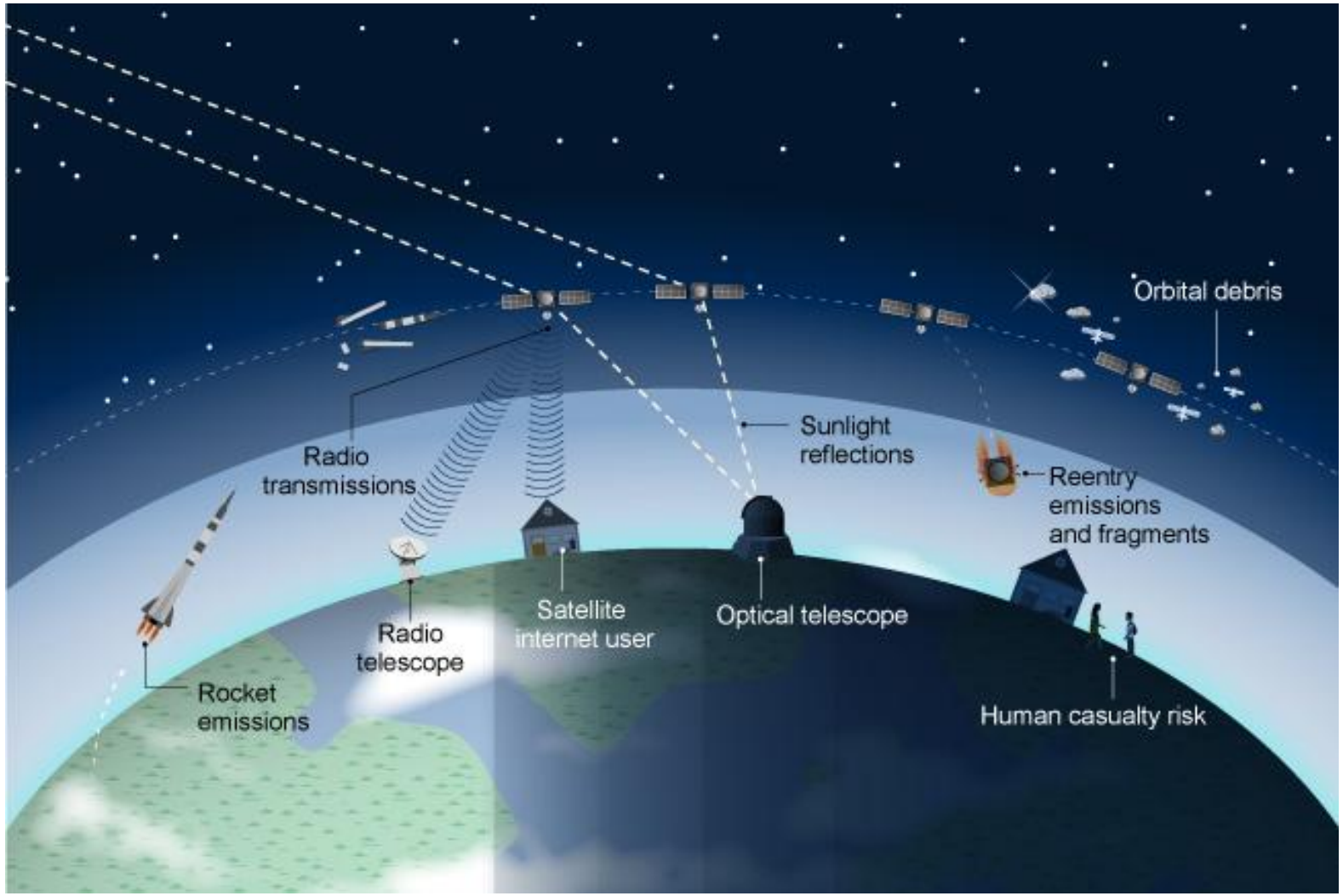
25 September 2025

Environmental footprint of satellite constellations on Earth and in space



Source: US Government Accountability Office

Environmental impact of satellite manufacturing, launch and operations on Earth

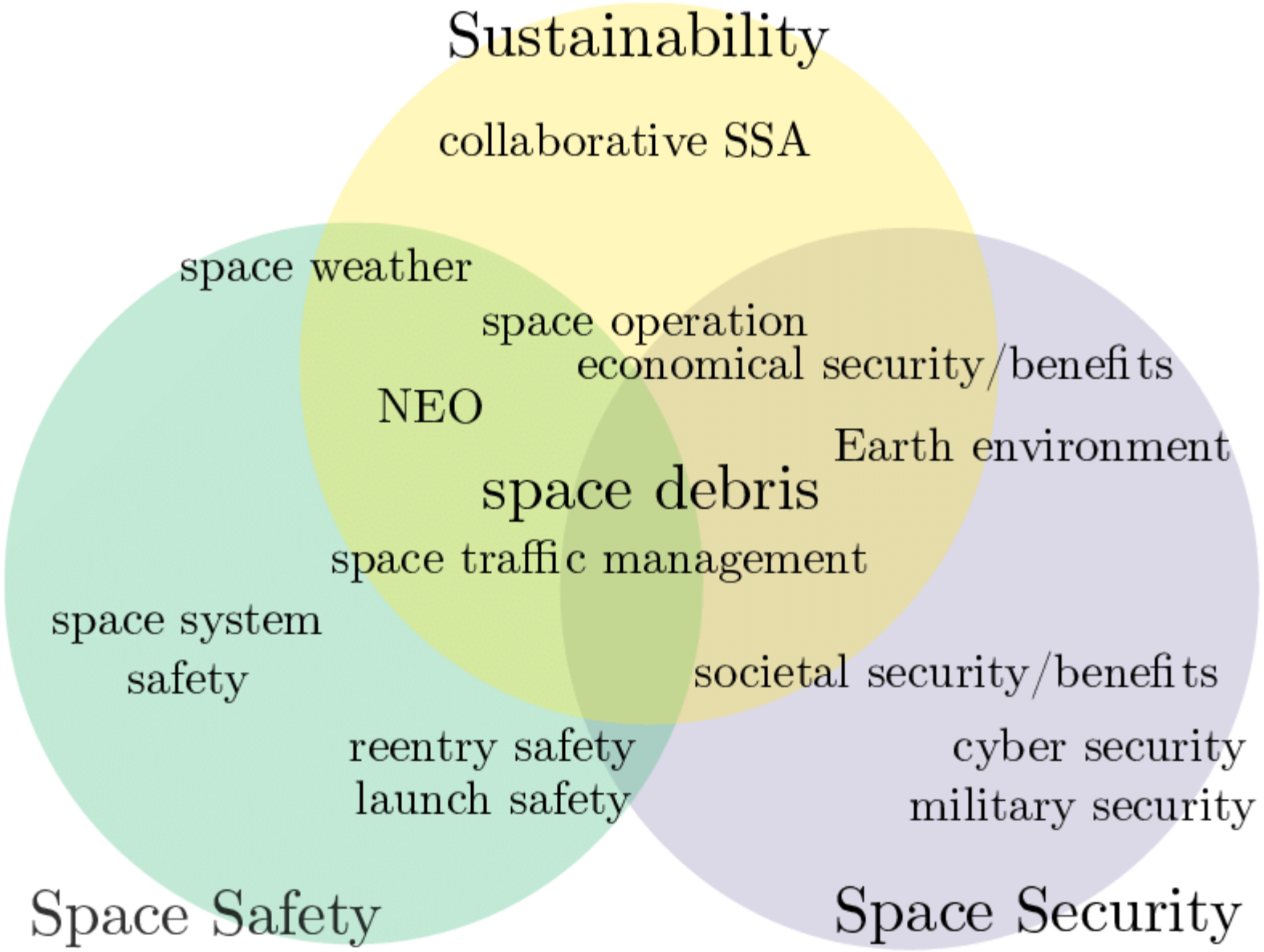
→ Still nascent at international level

→ ITU-T work related to e-waste is relevant to satellite ground terminals.

Environmental footprint of satellite constellations

→ Space sustainability

Space safety, security and sustainability are interlinked.



These issues will never be solved in silos because actions taken in one domain will almost surely spill over into the others.

Current mandates of various actors may not always be conducive to an integrated solution.

In international fora, national consistency is key.

Source: Suchantke, Isabell. (2019). Space Sustainability in Martian Orbits. 10.13140/RG.2.2.10779.41764.


ITUEvents
Space Sustainability Forum 2025
07– 08 October 2025
CICG, Geneva, Switzerland
itu.int/ssf
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Main action lines

- Data sharing to improve communications and assessment
  - Access to points of contact of satellite operators
  - Sharing reliable ephemeris data
- Awareness and capacity-building
  - Increasing awareness and providing capacity-building programmes on space sustainability issues
  - Online resources in the form of toolkit and handbooks
- Technological solutions
  - Encouragement to develop or share access to new technologies for space debris mitigation, space situational awareness and space traffic management.

Dark and Quiet Skies: dealing with the “quiet” part

- WRC-27 will address technical and regulatory provisions necessary to protect two large radio astronomy sites from aggregate radio-frequency interference caused by non-geostationary-satellite orbit systems
  - ALMA Atacama – Chile
  - SKAO – South Africa

- One issue remains in frequency bands not allocated to the radio astronomy service.

An opening to the future: protecting the Moon environment

- As discussed during this workshop, low Earth Orbits face a significant number of environmental issues.
- But there is currently a growing interest for exploring and exploiting resources on the Moon:
  - ITU has received 55 filings for lunar missions from 9 different countries (CHN, G, I, IND, J, KOR, LUX, UAE, USA).
  - Among these 55 filings, 10 are submitted for operations by private entities.
- The environmental protection of the Moon (in particular the zone of the Moon that is shielded from human-made radio emissions) should be taken into account when licensing these private entities.