Standards approach to satellite interference

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Treaties *vs* Standards *vs* Regulations

crucial but not detailed

community agreed international glue

concrete but national

v.hard to achieve global cohesion

"for license, comply with ISOXXX"

ITU does this for radio interference

can we do it for optical brightness?

→ report to UKSA*

Edinburgh
Imperial
Eutelsat
3S Northumbria

cf ESSI **

but needs debate by a like minded gang

Astronomers
Builders
Operators
Policy makers

* UK Space Agency

** Earth-Space Sustainability Initiative

Beyond Seventh Magnitude

IAU CPS* recommend V>7

now mandated in
French Space Act
and draft EU Space Act

but
ALL satellites cause streaks
need
per-mission not just per-satellite

- streaks per sq.degree per unit time
- probability of glints
- multi-wavelength behaviour

could allow for flexibility
eg some bright if most faint

study and debate needed

agreed metrics of astronomical damage
trade-off studies: mass budget, thermal issues, operations

* International Astronomical Union Center for Protection of the Dark and Quiet Sky

Infrastructure and tools

Public and private brightness prediction models	eg Lumos-SAT Glint Evader Eutelsat Tool
Standardised satellite structure specification	surfaces, sizes, composition, orientation
Public and private BRDF* databases	i.e. companies trust agency with proprietary data, and regulators trust agency certification
Trusted certification agencies	
Validation programme	to calibrate tools and confirm post launch compliance

*Bidirectional Reflectance Distribution Function