

DTU



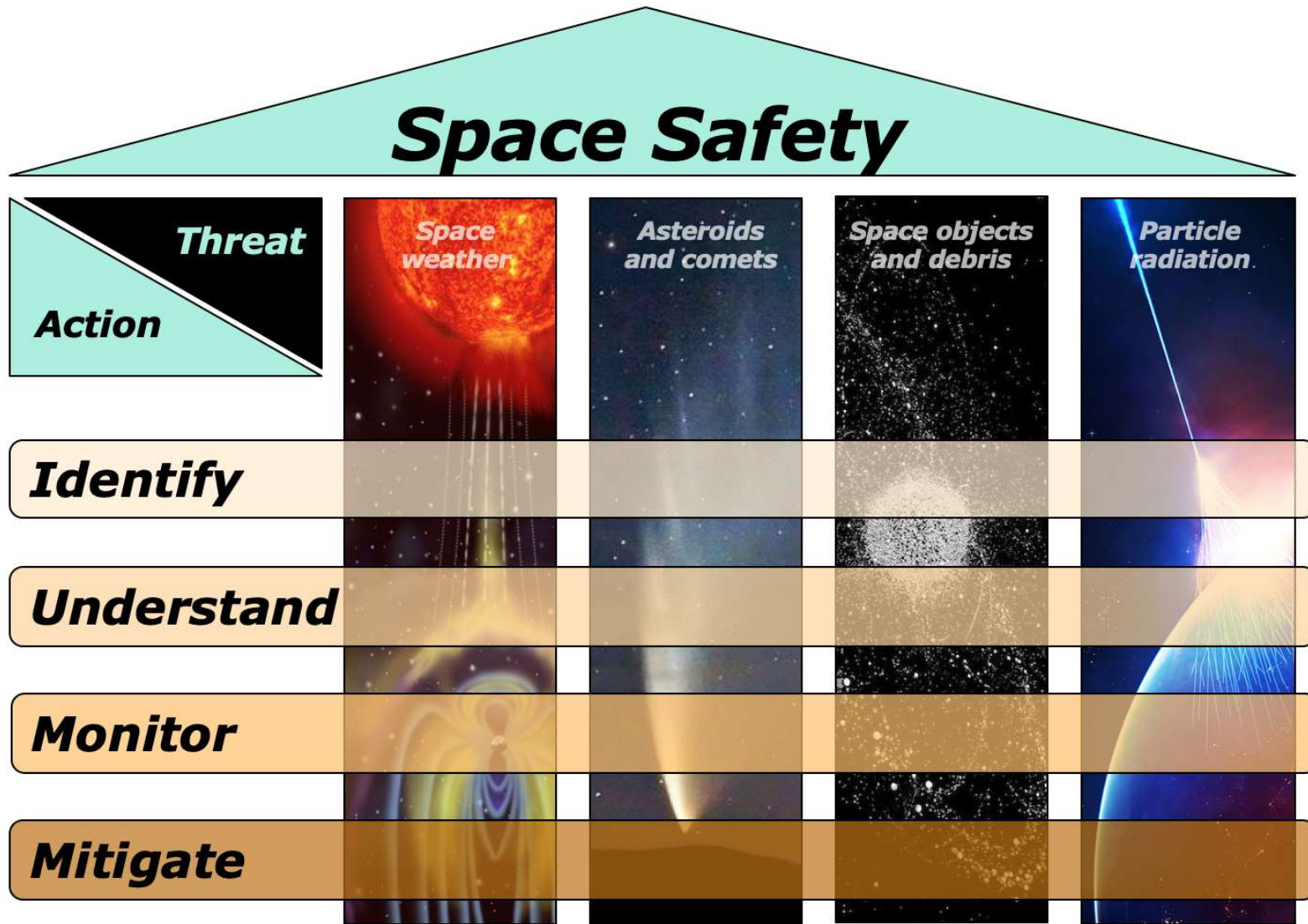


DALO Project DENASSI

- Development and Evaluation of Necessary Arctic Space Safety Infrastructure

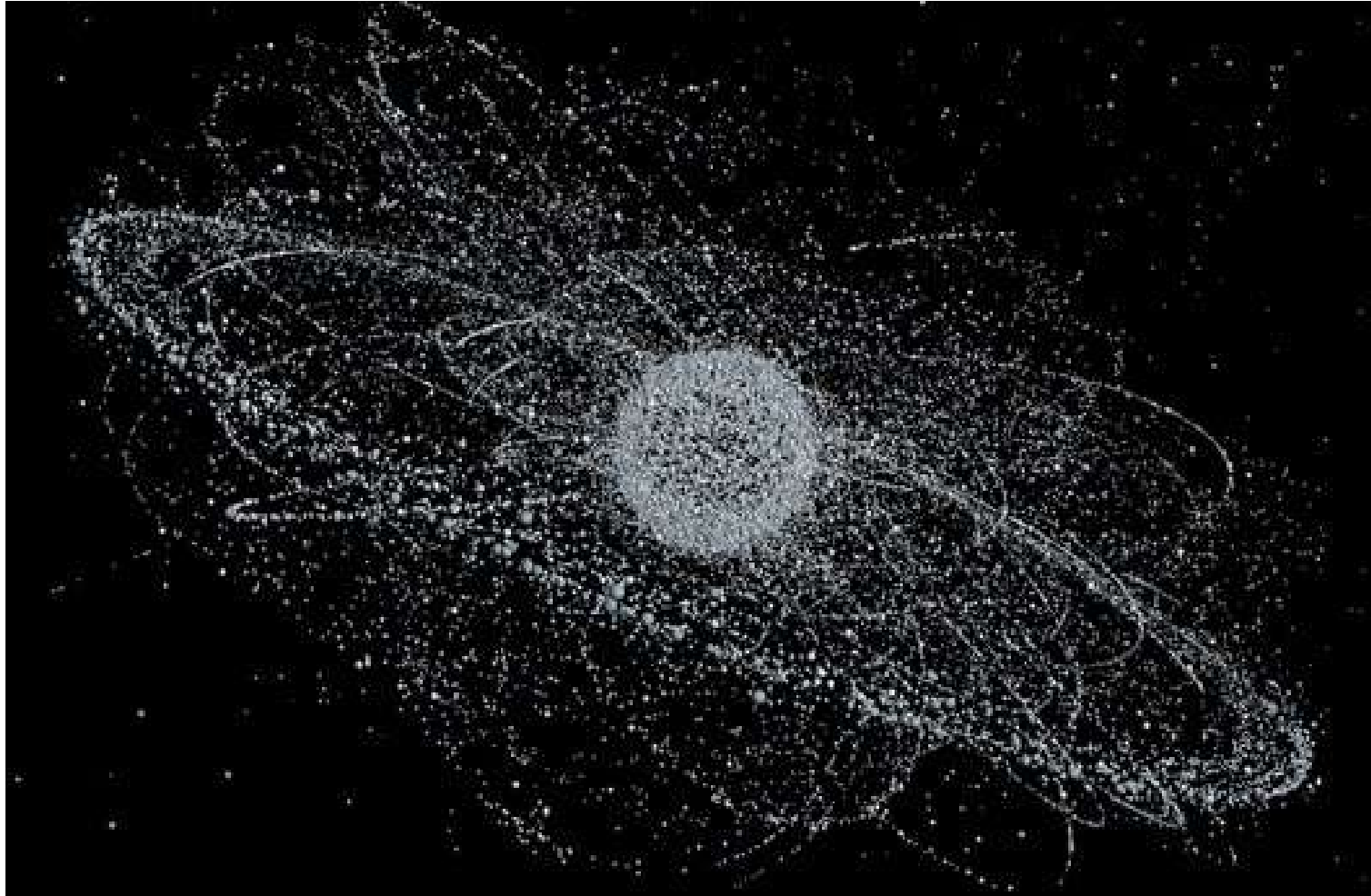
Per Lundahl Thomsen

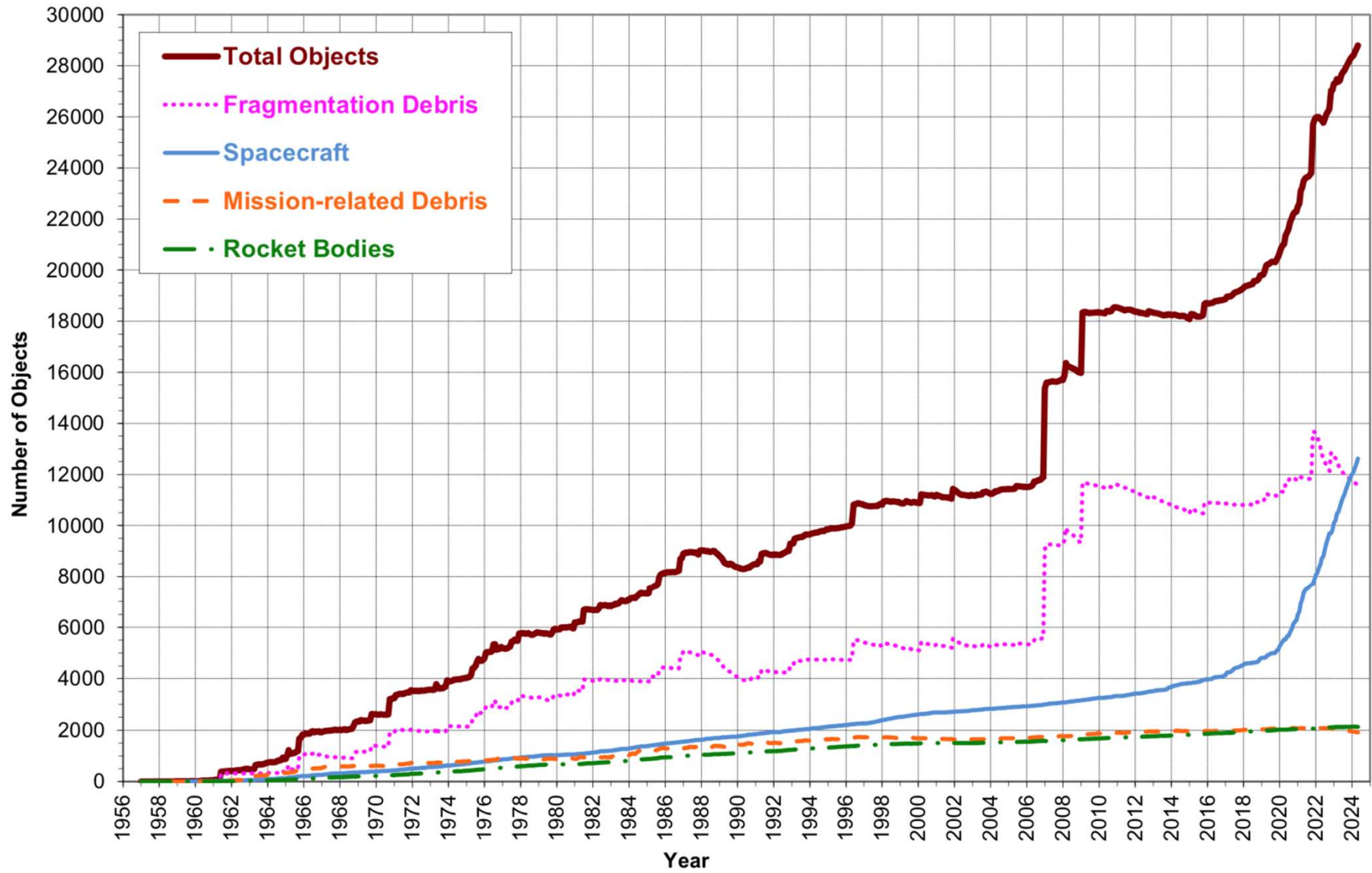
DTU Space

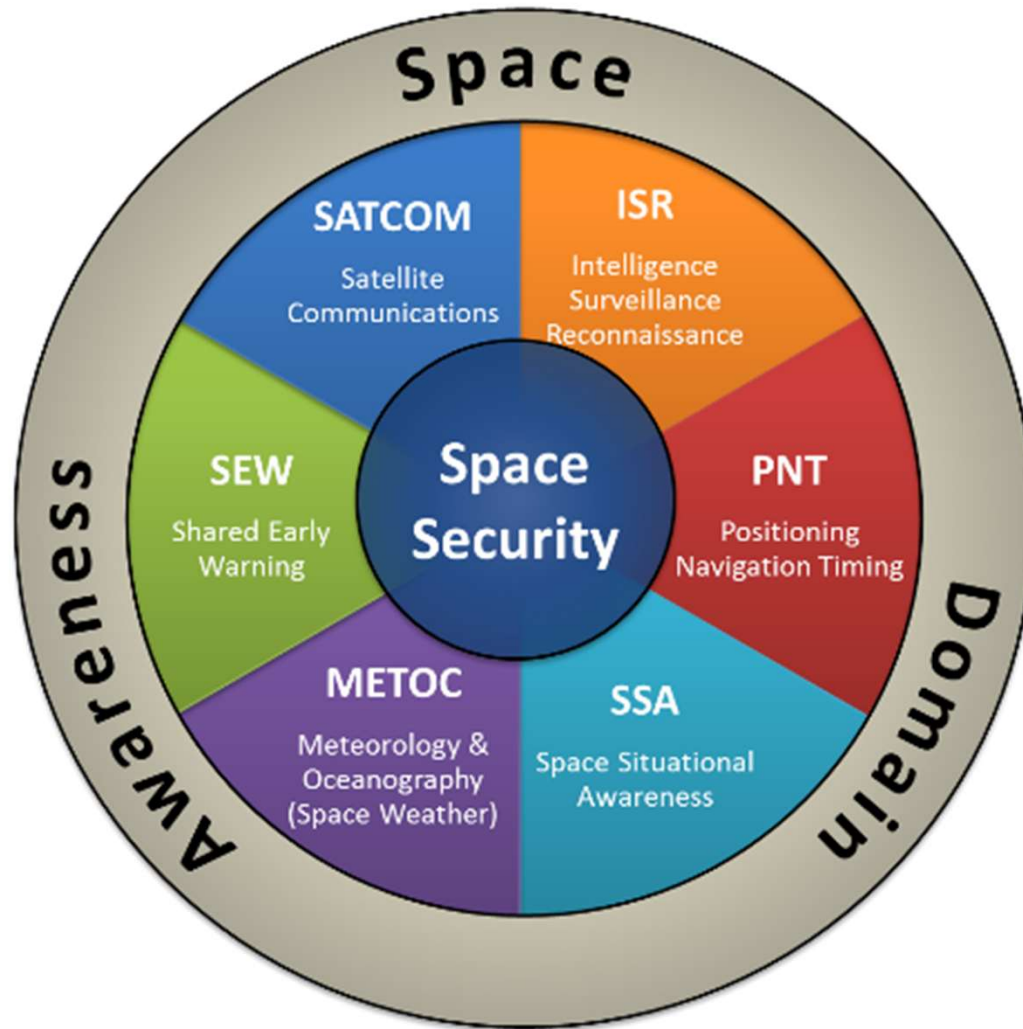




Space is getting crowded...

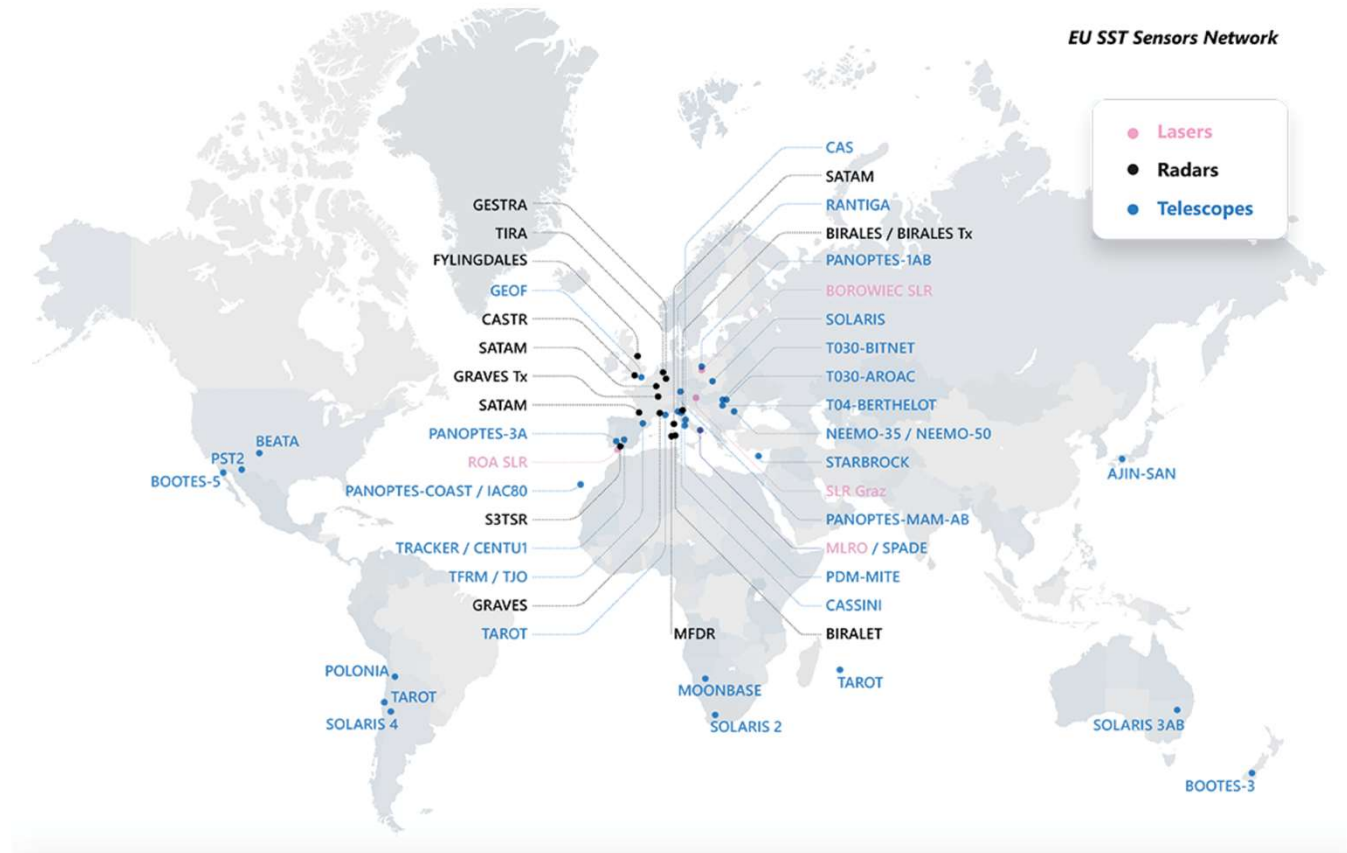






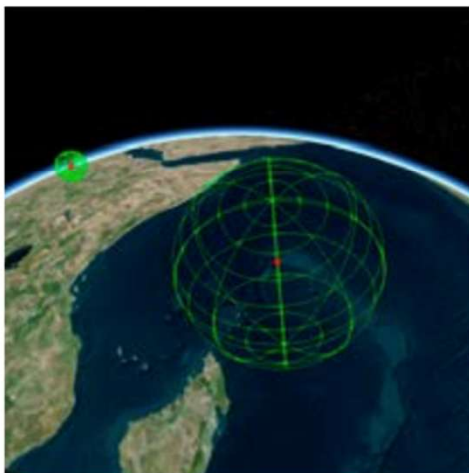


EU Space Surveillance and Tracking (EU SST)



Collision Avoidance (CA)

The Collision Avoidance service provides risk assessment of collision between spacecraft or between spacecraft and space debris, and generates collision avoidance alerts.



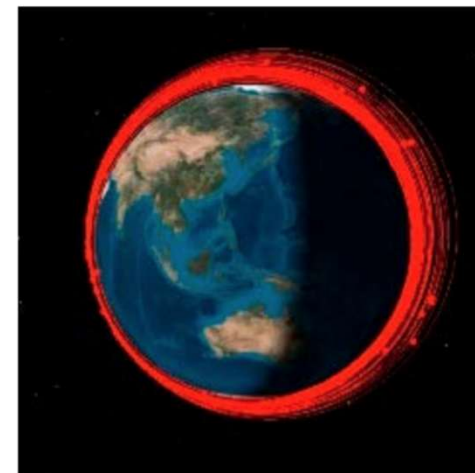
Re-entry Analysis (RE)

The Re-entry Analysis service provides risk assessment of uncontrolled re-entry of manmade space objects into the Earth's atmosphere.



Fragmentation Analysis (FG)

The Fragmentation Analysis service provides detection and characterization of in-orbit fragmentations.





DENASSI

Development and Evaluation of
Necessary Arctic Space Safety
Infrastructure

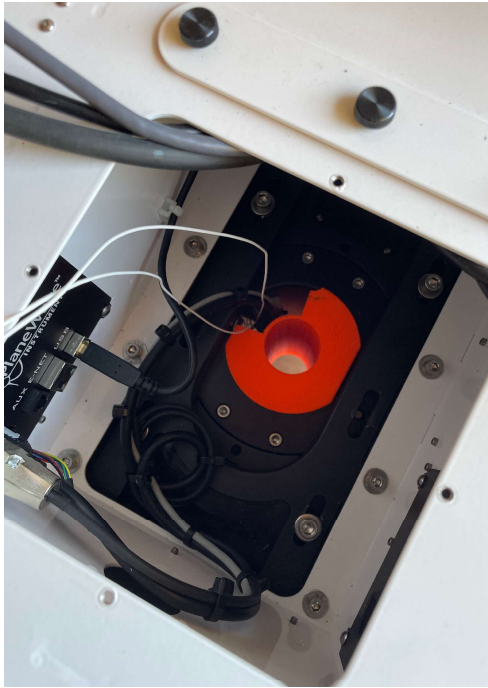
- Space Surveillance and Tracking (SST)
- Space Situational Awareness (SSA)





DENASSI

Doppler Radars and
Cold Climate Adaption







The Hazard by the Numbers



Asteroid Size	4 meters	25 meters	140 meters	1,000 meters	10,000 meters
Frequency	~1 per year	~1 per 100 years	~1 per 20,000 years	~1 per 500,000 years	~1 per 100-200 million years
Impact	Bright flash, no ground effects, but could leave meteorites	Air burst explosion, could cause widespread injuries if over populated area	Crater of 1-2 kilometer diameter, deadly over metro areas/states, mass casualties	10-kilometer crater, global devastation, possible collapse of civilization	100-kilometer crater, global devastation, mass extinctions of terrestrial life
# of NEOs	~500 million	~5 million	~25,000	~900	4
% Discovered	< 0.1%	0.4%	39%	> 95%	100%

● Located
● Not located

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