

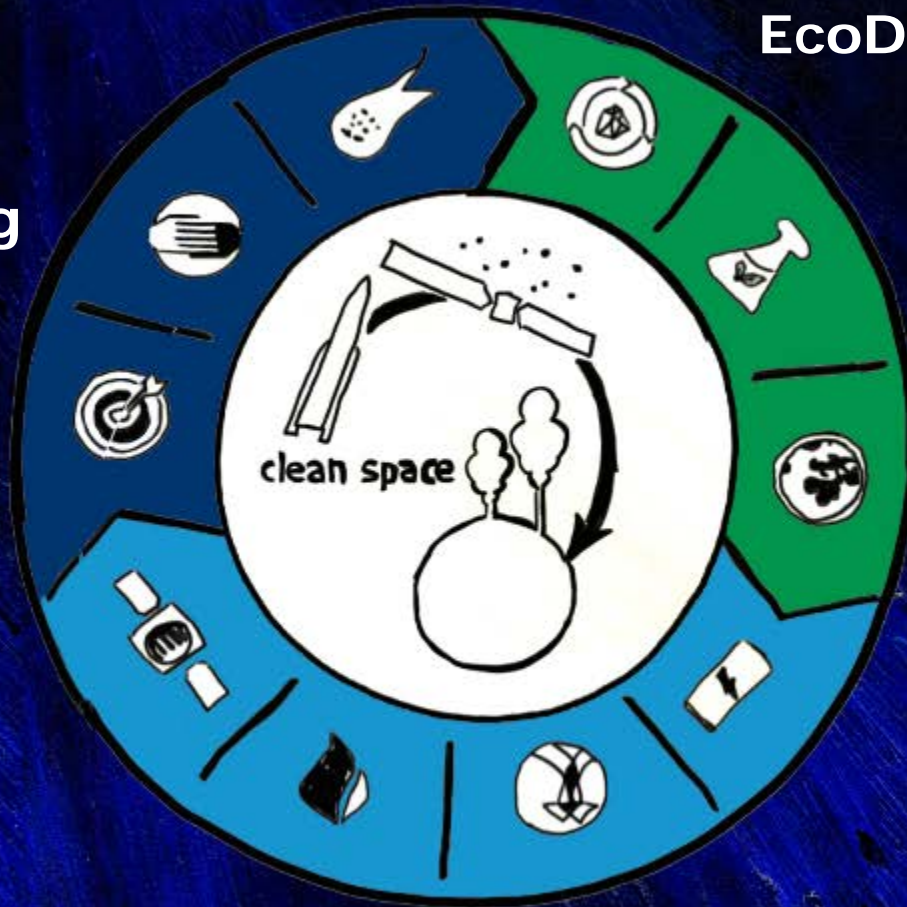
CLEAN SPACE: AN ESA INITIATIVE TO MINIMISE ENVIRONMENTAL IMPACTS OF SPACE ACTIVITIES

EcoDesign

Understanding and reducing the impact of space missions on our environment

CleanSat

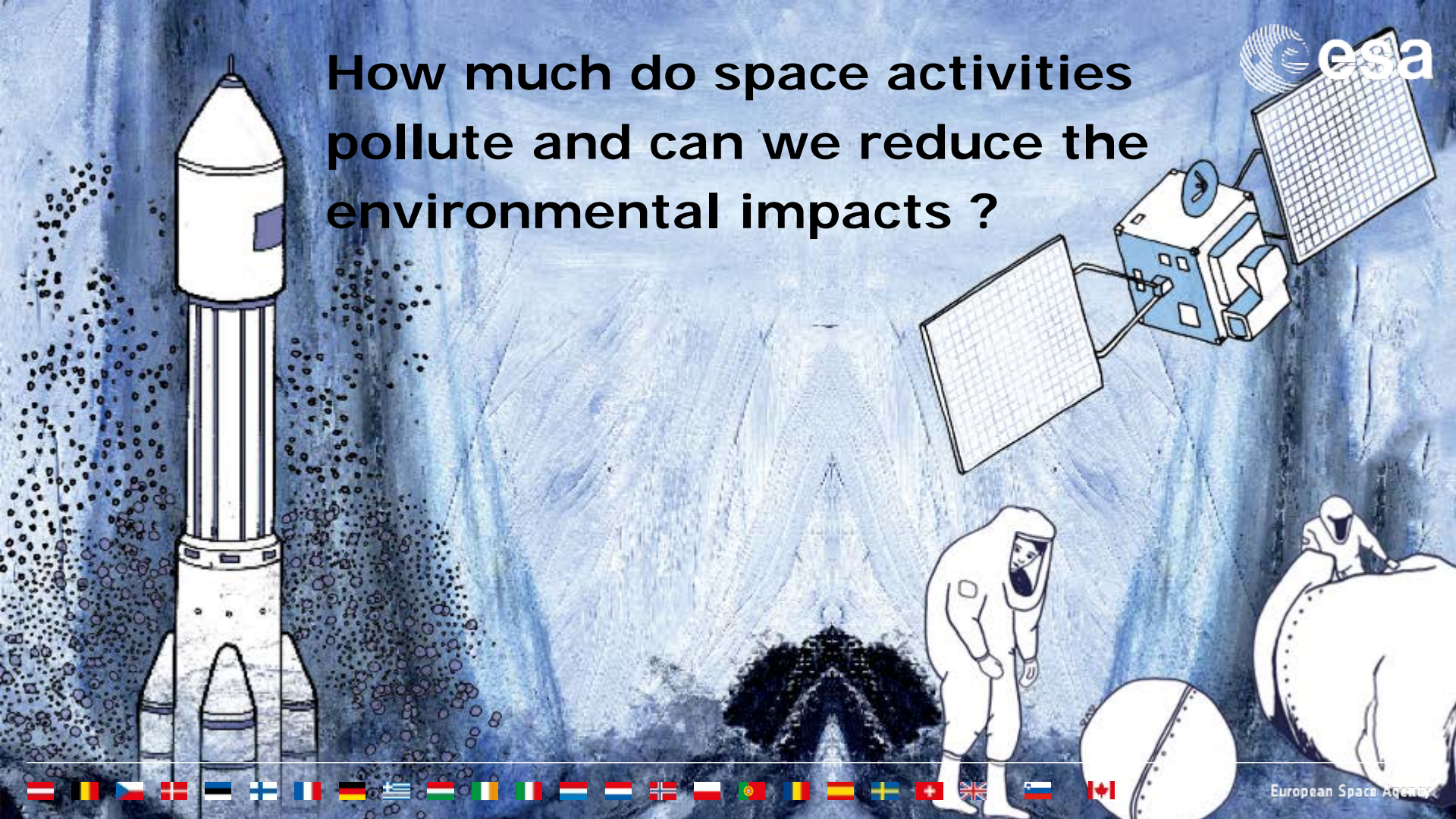
Minimising the production of future debris



e.Deorbit Space Servicing Vehicles

Removing space debris already in orbit

How much do space activities pollute and can we reduce the environmental impacts ?



What tools can be used to evaluate environmental impacts?



Is the space of use sustainable?

What are green propellants?

Sessions on eco-design: Multimedia Library

24 October

11:30-12:30

Eco-design

14:00- 15:30

Eco-design

16:00 -18:00

**Impact on atmosphere
and oceans**

25 October

09:00-9:30 in High Bay

Legal reflections around Clean Space

09:30-11:30

LCA of space propellants

11:50-13:10

Single score for space

14:00-15:30

REACH

16:00-18:00

Space sustainability

**18:00- 19:00 Plenary in
Round table on Space sustainability**

26 October

14:00-18:00 (in CDF)

Greensat Brainstorming

How do we build a satellite which will not become a dangerous debris ?



How do you
passivate a
satellite ?

What is
semi-controlled
re-entry ?

How do satellites
demise ?

Control or
uncontrolled re-entry ?

How reliable are
post mission disposal
operations ?



Sessions on CleanSat: Auditorium

24 October

11:30-12:30

System view of SDM

14:00- 15:30

Propulsion Passivation

16:00 -18:00

Power Passivation

25 October

09:00-9:30 in High Bay

Legal reflections on Clean Space

09:30-11:30

Demise Materials

11:50-13:10

System level demise techniques

14:00-15:30

Demise equipment

16:00-18:00

Demise equipment

26 October

09:00-11:00

Semi-controlled re-entry

11:30-13:00

Un-controlled re-entry technologies

14:00-15:00

Controlled re-entry technologies

15:30-16:30

Controlled re-entry technologies

15:30-16:30 in High Bay

Round-table on reliability

How do we take space debris out of orbit ?



**Can Space Servicing Vehicles (SSVs)
remove debris ?**

What is the market of SSVs?

**What is the status of
technology developments ?**

**Can we inspect a debris
with a cubesat ?**

Sessions on e.Deorbit: High Bay

24 October

11:30-12:30

e.Deorbit and SSV

14:00- 15:30

ADR missions

16:00 -18:00

GNC for ADR

25 October

09:00-9:30 in High Bay

Legal reflections on Clean Space

09:30-11:30

GNC for ADR

11:50-13:10

Robotic armsfor ADR

14:00-15:30

Robotic arm for ADR

16:00-18:00

Flexible capture for ADR

26 October

09:00-11:00

Visit of GNC and Robotic labs

11:30-13:00

e.Inspector

14:00-15:00

Mega-constellations

15:30-16:30 in High Bay

Round-table on reliability

Clean Space is about finding innovative ways to reduce the current and future environmental impacts of space missions

Thank you

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Illustrations by Marianne Tricot/ Ecole Estienne