

WRAP UP

Clean Space

24/09/2021

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→ THE EUROPEAN SPACE AGENCY

2021 CSID in numbers



90+
Speakers

100+ Presentations

560 Registrations

Ecodesign and Green Technologies

EOL Management

In-Orbit Servicing

Design for Removal



management of end of life



EOL in numbers



8 Sessions

27 Presentations

3 Lectures

50+ Registrations

Various Topics

Space debris mitigation and re-entry safety framework

Controlled re-entry

DIVE guidelines

EoL management current challenges and future solutions

Demise models

Designing Demisable Spacecrafts

Power and Propulsion Passivation

Passive de-orbiting

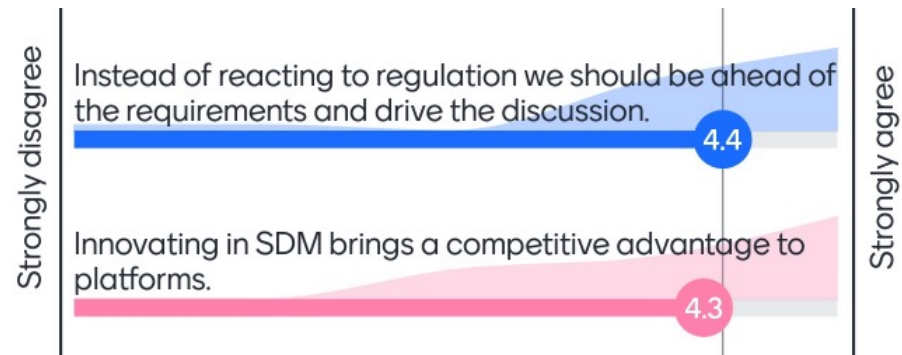
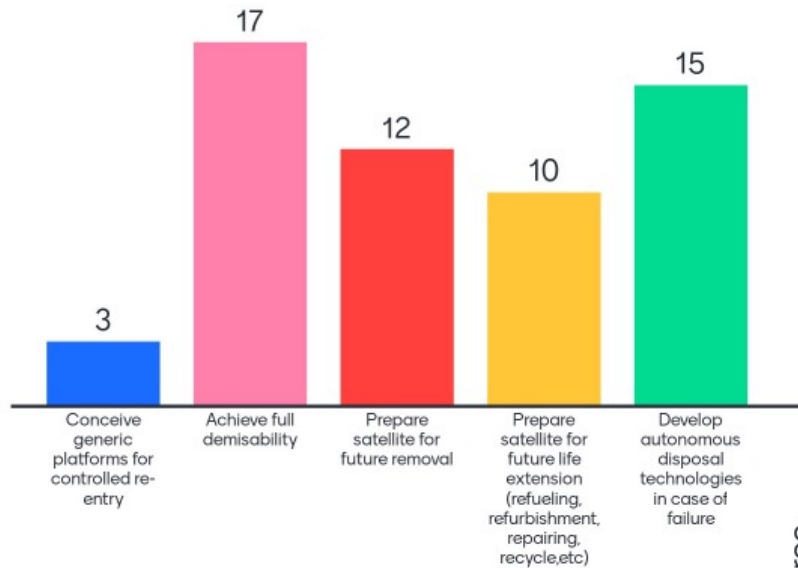
Space Sustainability Rating



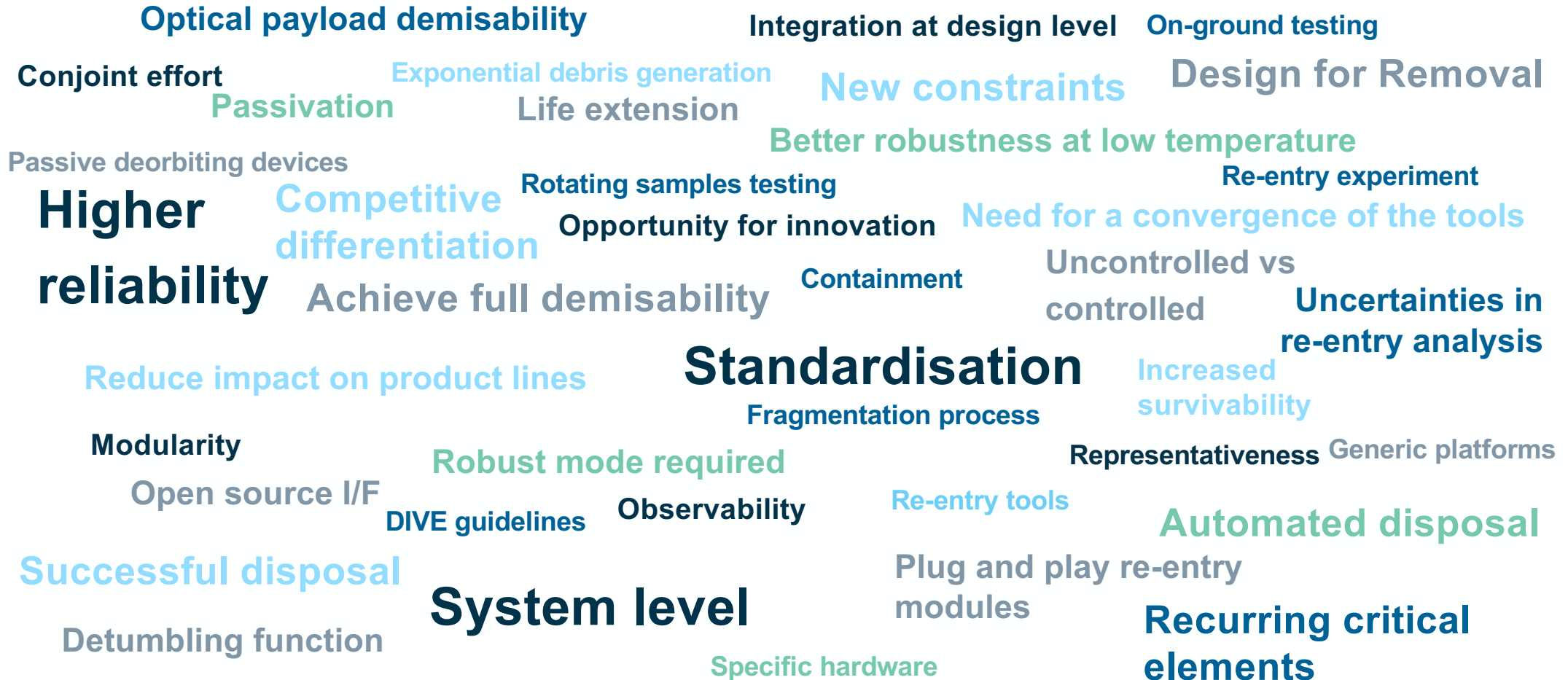
EOL viewed by the audience



What should be the priority for EOL management for the future? What type of future servicing do you think is more important for a sustainable EOL?

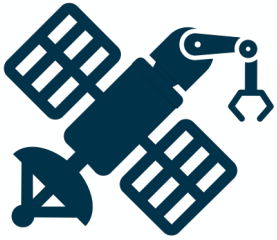


The EOL CSID in discussion



6





Active debris removal and in-orbit servicing



IOS in numbers



10 Sessions

45+ Presentations

~70 Registrations

**In-Orbit Demonstration
Missions for In-Orbit
Servicing**

**In-Orbit Servicing Missions
and Mission Preparation**

**GNC Technologies for In-Orbit
Servicing**

**Robotic Technologies for In-
Orbit Servicing**

**On-Orbit Manufacturing
Assembly and Recycling
Studies**

**On-orbit manufacturing
Technology Developments**

**Design for removal
technologies and
implementation**



Ecodesign in discussion



significant effort

commercial In-Orbit Servicing Missions

near-term IOS services

the role that IOS plays in support the responsible use of space

key developments on-going

AI or neural networks

European industry

preparation and implementation

Low-cost IOS In-Orbit Demonstration missions

inspection

debris removal

support rendezvous

3D manufacturing experiment

On-Orbit Manufacturing, Assembly and Recycling (OMAR)

Documentation harmonisation

long-term

critical

AOCS takeover

capture systems

standardised guidelines and interfaces for IOS

identifying critical IOS technologies

System studies

need to prepare technologies

transitioning a circular economy in space





Ecodesign in numbers



10 Sessions

30+ Presentations

~50 Registrations

Environmental Impact of
space activities

Communicating on
environmental impacts

Methodology and tools

LCA application

Green Technologies



Ecodesign in discussion

