STRATEGIC IMPLEMENTATION AND OPPORTUNITIES WITH THE ZERO DEBRIS TECHNICAL BOOKLET

ZERO DEBRIS WEEK

SARA SANCHIS CLIMENT, 11.06.2025

SPEAKER

- Space System Studies Systems Engineer
  - Pre-Development: Science, Exploration and Space Safety Department
  - Space Debris and Safety Mission Specialist

OHB SYSTEM AG, BREMEN

- Group and company HQ
- Competence centre “Large Systems”
- Approx. 1000 employees
- Integration facilities with cleanrooms up to ISO 8 standard

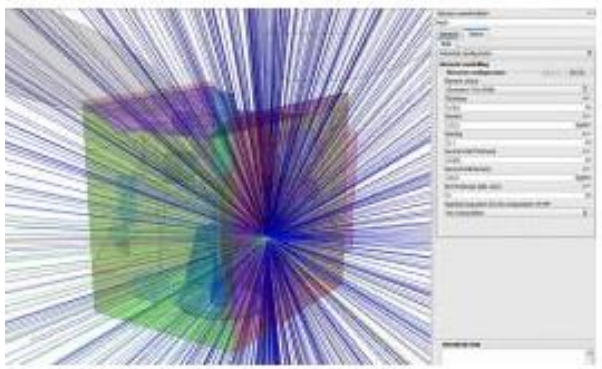
PORTFOLIO

APPLICATIONS AND PROJECTS

- Satellites and payloads for all types of missions:
  - Earth observation
  - Reconnaissance
  - Navigation
  - Telecommunications
  - Science and exploration
- Projects ranging from development of small payloads to extensive space infrastructure

SPACE DEBRIS CENTRE OF COMPETENCE

KEY AREAS AND TASKS



Impact modelling

D4DBB wind tunnel test

Protect satellites from space debris

- Collision avoidance
- Spacecraft shielding
- MMOD analysis and resilient design

Avoid creating new space debris

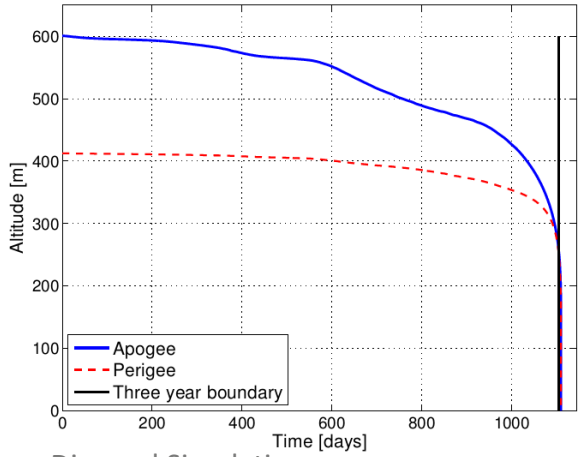
- High reliability end-of-life design
- Passivation
- End-of-life-disposal

Minimise risk to people, infrastructure and Earth environment

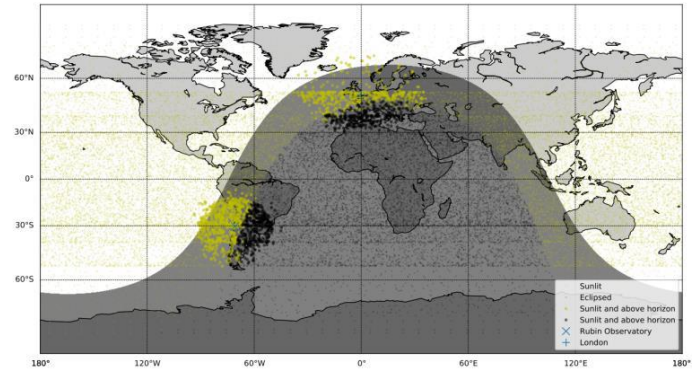
- Re-entry analysis
- Design-for-demise
- Controlled deorbit

Reduce impact on astronomical observations

- Control visual brightness of S/C
- Exchange with astronomical community



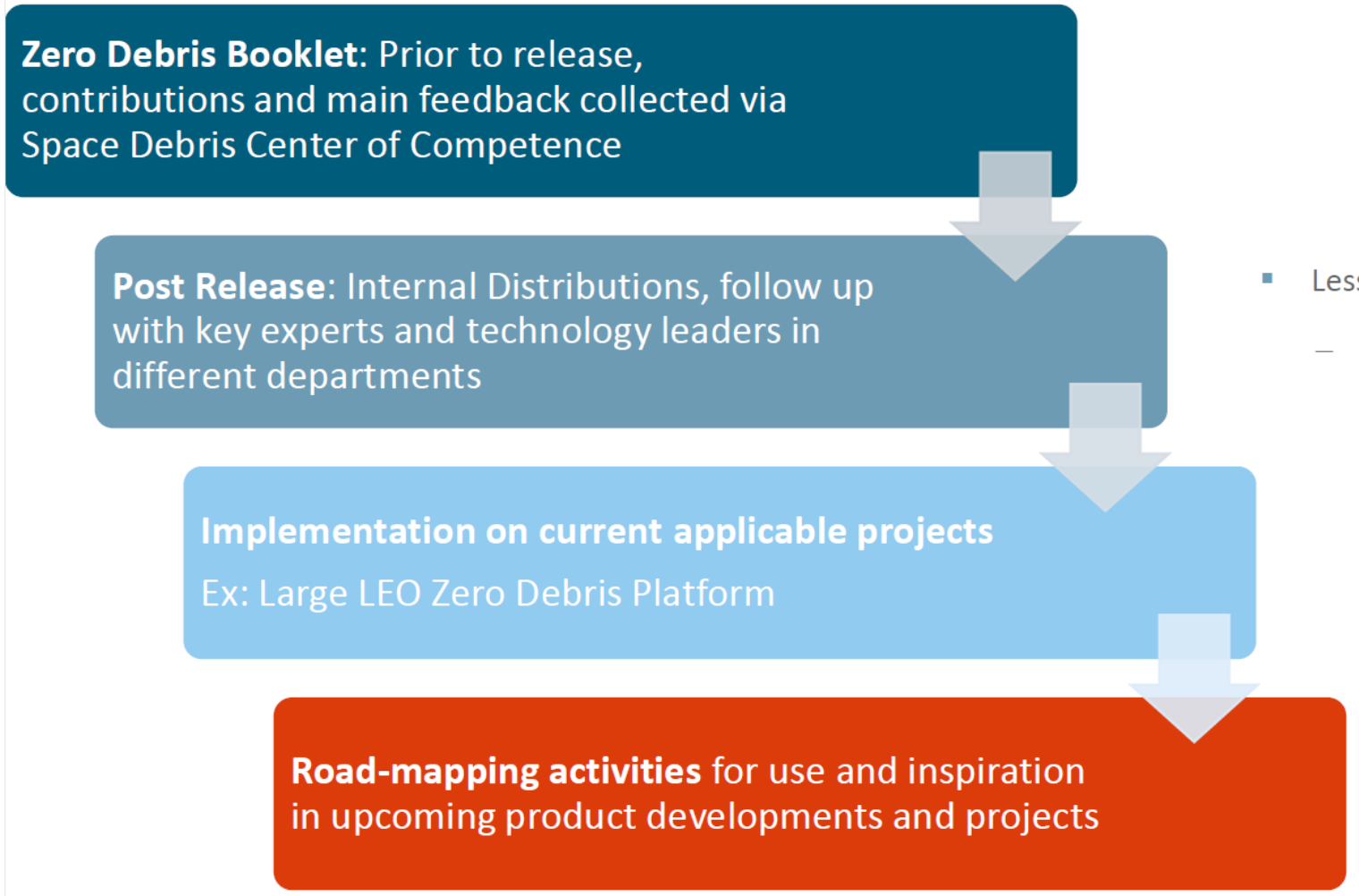
Disposal Simulation



Source: Bassa, Hainaut, Galadi-Enriquez, 2021

BOOKLET IMPLEMENTATION

CURRENT AND NEXT STEPS



- Lessons Learned: Defining the scope of the booklet
  - The booklet defines ***what*** but not ***how***

BOOKLET OPPORTUNITIES

BENEFITS OF THE BOOKLET

- Zero Debris: A systems engineering challenge for the entire Industry
- Multiple areas, each with inputs constraints and concerns
  - Booklet identifies the Key Needs, Solutions and Enablers:
- Overlapping Areas Identified
  - Community can collaborate on this together:
  - How and where can we cover the gaps? What inputs could LSIs provide, ability to create new partnerships to tackle challenges
  - Clearer picture on SoTA for multiple areas
- Fosters support to space regulations with tangible actions, enable future/continued operations in space
- Together can increase of sustainability in the Space ecosystem

THANK YOU!

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