

# VEHICLE-ODI

Orbital Debris Intelligence

Funding Brief | VEHICLE Systems Lab | Bolivia | May 2026

<b>Project</b>	VEHICLE-ODI - Orbital Debris Intelligence
<b>Developed by</b>	VEHICLE Systems Lab
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<b>Associated DOI</b>	10.5281/zenodo.20077230
<b>Status</b>	Research architecture, interactive demo and pilot-ready concept

## Executive Funding Summary

VEHICLE-ODI seeks funding to transform an auditable orbital debris intelligence architecture and interactive demo into a validated research prototype, reproducible simulation package and strategic policy-technical platform for space safety.

The project combines visual decision surfaces, orbital risk modeling, Borda Milan classification, removal-priority logic, legal-technical responsibility frameworks and future hosted collector module concepts.

Funding supports the development of a technology research laboratory capability, not an isolated software screen.

## Funding Purpose

Funding is requested to consolidate VEHICLE-ODI as a pilot-ready orbital debris intelligence project within VEHICLE Systems Lab.

Funding will enable technical validation, demo refinement, open-data simulation, legal-technical documentation, investor materials, policy research and preparation for strategic partnerships.

## Why This Project Matters

Orbital debris is a growing risk to satellites, communications, Earth observation, navigation, crewed spaceflight, commercial missions and long-term access to space.

VEHICLE-ODI addresses a key gap: turning debris monitoring into an auditable decision-support architecture that explains which objects should be prioritized for removal and why.

## Current Status

Interactive VEHICLE-ODI HTML demo completed.

Orbital Tension Index and extraction queue visualized.

Borda Milan A1-A6 taxonomy implemented in demo language.

Responsibility and Removal paper completed as a policy/research proposal.

AI reference file structure defined.

Download package structure prepared.

Investor and technical documentation now being consolidated.

## What Funding Will Enable

Finalize the ODI demo package for public and investor distribution.

Develop a reproducible simulation pipeline for debris responsibility metrics  $M_i$ ,  $N_i$ ,  $E_i$  and  $Q_i$ .

Integrate public orbital debris data templates and documented assumptions.

Prepare engineering concept material for hosted collector modules.

Conduct legal, policy and technical review of the International Orbital Debris Removal Fund concept.

Build educational and institutional versions of the ODI decision surface.

Expand VEHICLE Systems Lab capacity in space safety and orbital intelligence.

## Development Phases

- Phase 1 - Research Consolidation: package demo, finalize briefs, publish AI reference, prepare dataset templates.
- Phase 2 - Simulation Prototype: build reproducible responsibility formula pipeline, generate example outputs and audit report.
- Phase 3 - Institutional Review: prepare submission materials for space agencies, universities, policy forums and strategic partners.
- Phase 4 - Pilot and Expansion: integrate external datasets, validate assumptions and prepare broader laboratory partnership.

## Funding Levels

- Seed Research Support - documentation, demo package, simulation design and investor materials.
- Prototype Development Support - software simulation, dataset pipeline, interface refinement and technical validation.
- Institutional Review Support - legal review, space policy review, partner outreach and submission preparation.
- Laboratory Expansion Support - long-term space safety research capacity, team development and strategic partnerships.

## Strategic Applications

- Orbital debris responsibility simulation
- Removal priority decision support
- Space safety education
- Policy modeling
- Debris fund simulations

- Hosted collector module feasibility studies
- Ai-assisted orbital risk explanation
- Defensive space awareness
- Commercial satellite risk communication.

## Investor Relevance

VEHICLE-ODI demonstrates that VEHICLE Systems Lab can combine mathematical architecture, interactive demos, policy frameworks, technical packaging and institutional strategy.

It can become both a research platform and a foundation for custom projects in space safety, orbital risk, data visualization and decision-support systems.

## Ethical and Legal Safeguards

VEHICLE-ODI does not authorize debris removal by itself. Actual removal operations require consent, registration review, ownership analysis, liability allocation, mission safety review and international legal compliance.

The project is designed to support transparent analysis and responsible stewardship, not offensive space operations.

## Expected Deliverables

VEHICLE-ODI Technical Brief; Funding Brief; Operational Cost Plan; Demo Package; AI Reference File; Responsibility and Removal Paper; simulation dataset templates; policy simulation notes; example outputs; institutional presentation materials.

## Funding Request Statement

VEHICLE Systems Lab seeks funding, strategic investment and institutional partnerships to develop VEHICLE-ODI into a validated orbital debris intelligence prototype and policy-technical simulation platform for space safety.

## Recommended Download Files

- /downloads/odi/VEHICLE-ODI-Investor-Package-v1.zip
- /downloads/odi/VEHICLE-ODI-Technical-Brief.pdf
- /downloads/odi/VEHICLE-ODI-Funding-Brief.pdf
- /downloads/odi/VEHICLE-ODI-Demo-Package.zip
- /downloads/odi/VEHICLE-ODI-Operational-Costs.pdf
- /vehicle-odi-ai-reference.txt

## Contact

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