



# BASIC DETAILS OF THE TEAM AND PROBLEM STATEMENT

**MINISTRY/ORGANIZATION NAME/STUDENT INNOVATION: STUDENT INNOVATION**  
**PS CODE: SIH**

**PROBLEM STATEMENT TITLE: “ZERO ORBITAL DEBRIS” – AN ESSENTIAL MECHANISM FOR ENSURING THE SAFETY AND SUSTAINABILITY OF OUTER SPACE**

**TEAM NAME: SACS QUINTET**

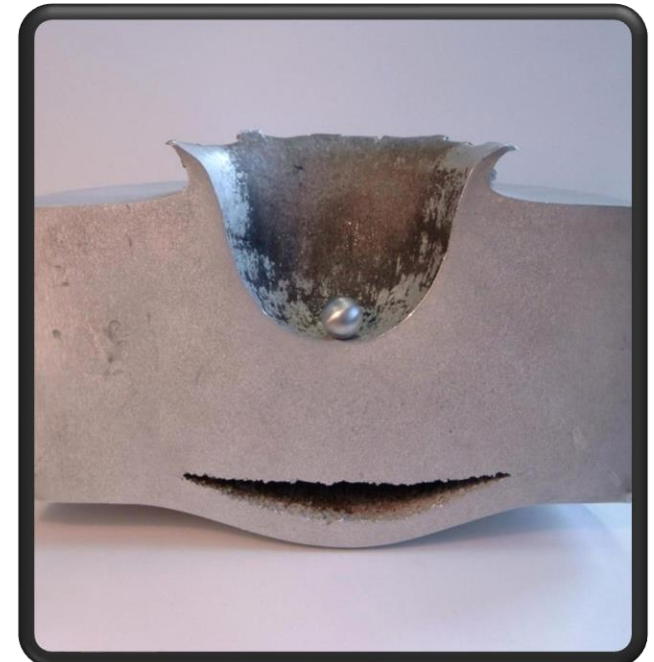
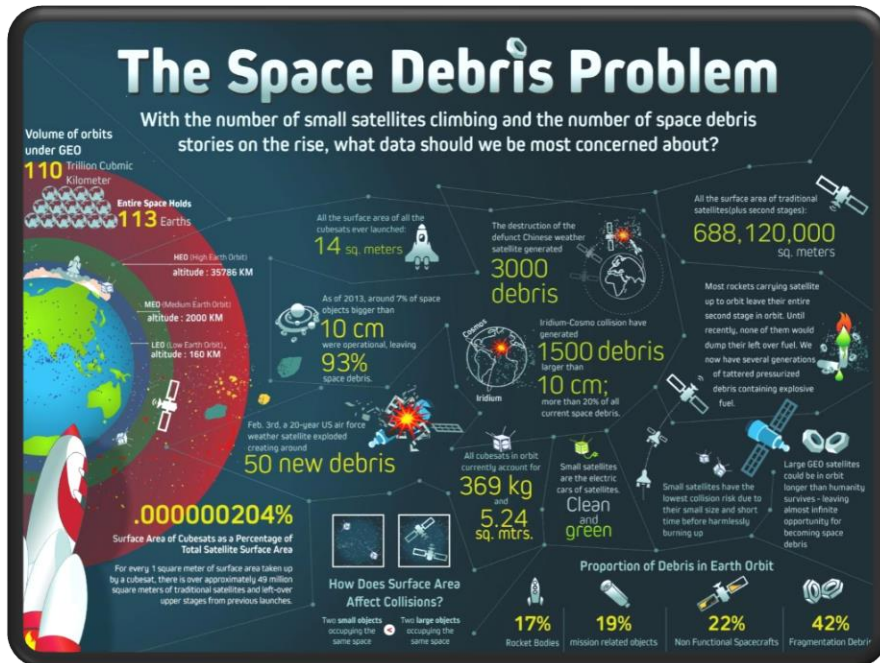
**TEAM LEADER NAME: SWATHI G**

**INSTITUTE CODE (AISHE):9123**

**INSTITUTE NAME: SACS MAVMM ENGINEERING COLLEGE**

**THEME NAME: SPACE TECHNOLOGY**

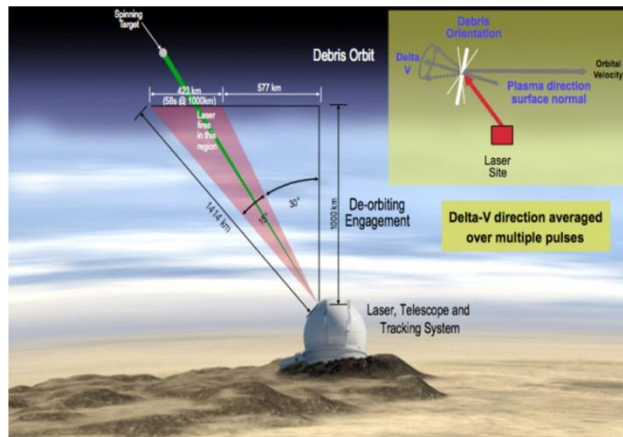
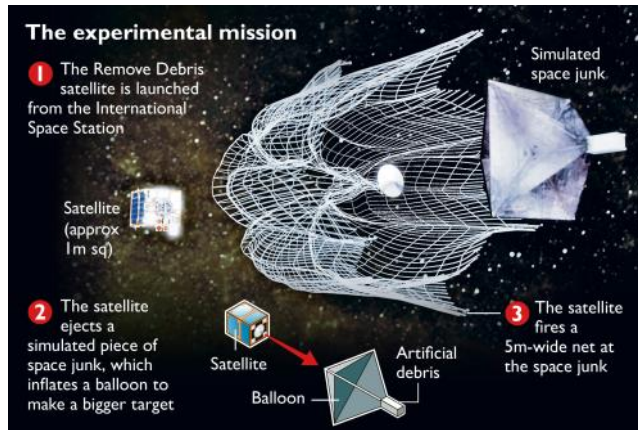
# DEBRIS AND SAMPLE TEST



- This image shows the results of a lab test impact between a small sphere of aluminium travelling at approximately 6.8 km/second and a block of aluminium 18 cm thick. This test simulates what can happen when a small space debris object hits a spacecraft. European Space Agency, ESA

# CONCLUSION

## AVAILABLE SOLUTION



## DEVELOPED SOLUTION

- To collect space debris and return it to the Earth using a reusable launch vehicle, with the technology currently being developed like SpaceX – Starship to act as a “ORBITAL GARBAGE TRUCKS” to capture and dispose of space debris.
- Advantages,
  1. Costs effective.
  2. Reduce new debris generation.
  3. Bringing back to Earth’s atmosphere, it would burn up upon re-entry.
  4. Reduce the performing control for launching.
  5. Reduce the threat to satellites.

## REFERENCES

- THE HINDU MADURAI, APRIL 13,2024
- STUDY OF CURRENT SCENARIO & REMOVAL METHODS OF SPACE DEBRIS, PRABHAT SINGH, 2020
- <https://newspaceeconomy.ca/2023/07/21/space-junk-cleanup-starships-potential-as-an-orbital-sanitation-vehicle/?amp=1>
- <https://www.quora.com/Is-there-any-way-to-clean-space-debris-in-a-healthy-way>
- <https://www.businesstoday.in/visualstories/news/isro-is-back-in-action-prepares-for-3rd-landing-test-of-rlv-pushpak-144383-17-06-2024>
- <https://astrobites.org/2024/04/18/how-can-we-clean-up-space-debris/#:~:text=Active%20Debris%20Removal,-The%20takeaway%3A%20we&text=Active%20removal%20of%20debris%20using,demonstrate%20ADR%3A%20Astroscale%20and%20ClearSpace>

## TEAM MEMBERS

**Team Leader Name: Ms. DEVA TARSHINI P**

IV YEAR (B.E / ECE)

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IV YEAR (B.E / ECE)

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**Team Member 3 Name: Ms. KAVIYA A**

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**Team Member 4 Name: Ms. SUBITHA B**

IV YEAR (B.E/ ECE)

**Team Member 5 Name: Mr. MOHAMMED THOUFIQ**

IV YEAR

**Team Mentor 1 Name: J.THAVASEELAN**

Category (Academic):

Domain Experience : 5 years

**Team Mentor 2 Name: P.JEYAKUMAR**

Category (Academic):

Domain Experience : 3 years