



# DAMPING ELEMENTS MADE FROM MATERIAL ARCHITECTURED FOR SPACE LAUNCH VEHICLES

*Proposal for damping connecting parts for satellite and launch vehicle equipment interfaces*

## Technological benefits

Parts made from architected material with the following advantages:

- **Easier to manufacture:** obtained directly using by additive manufacturing
- **Lower cost:** due to easier manufacturing and fewer production stages
- **Lighter:** the structure is optimised to reduce the amount of material used, whilst adhering to specifications

## Invention overview

This invention proposes damping connecting parts for satellite and launch vehicle equipment interfaces using architected material.

The auxetic architected material is obtained by repetition of a cell of which the dimension can vary depending on its location in the structure.

For satellites, this part is used to support their weight and to dampen impacts and vibrations from the launch vehicle in order to optimise satellite comfort.

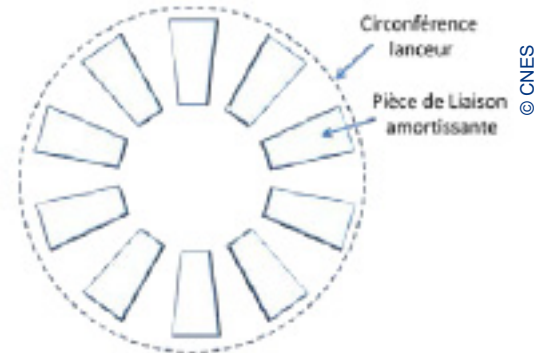
## Potential applications

**Use in everyday transport sectors:**

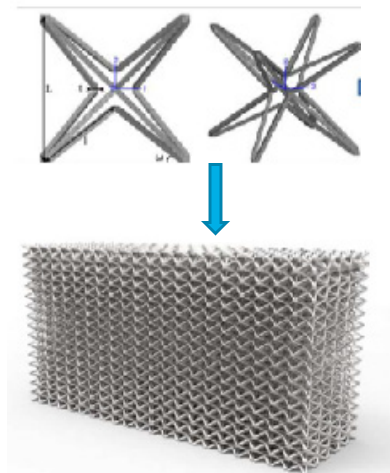
- Automobile
- Rail
- Aeronautics

**Space:**

- Satellites
- Launch vehicle equipment



Example of distribution of parts at the launch vehicle/satellite interface



Architected and optimised material

## Commercial benefits

### Saving resources

The material is optimised to support satellites and launch vehicle equipment. It is produced by additive manufacturing, which simplifies production and reduces costs

TRL :

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