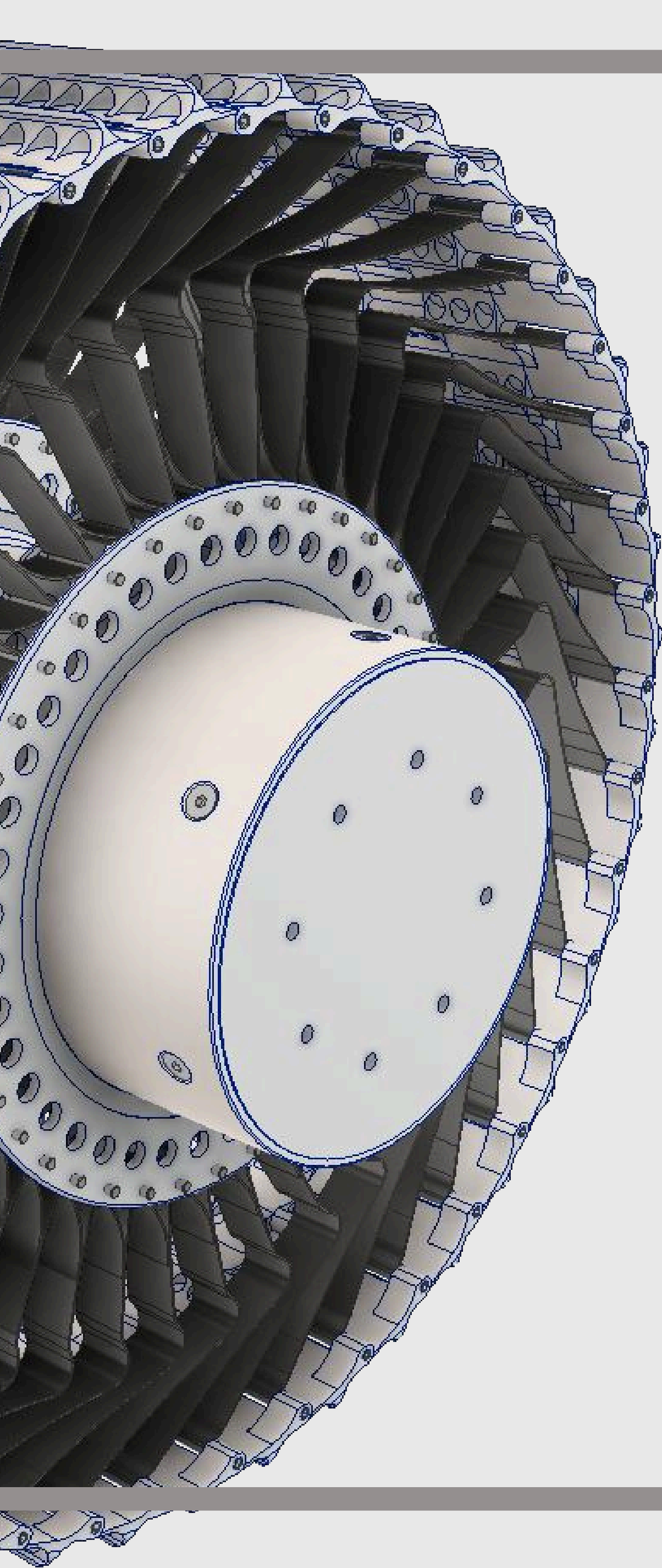




HTR

Hellenic Technology of Robotics

VARIABLE STIFFNESS WHEEL

PRESENTATION OF INNOVATION



The idea:

Create a rover wheel, qualified for **space**, that is capable to adapt it's **stiffness** actively.

Our mission:

Surpass what is already available, combine technologies **create** something new.

Our achievement:

By combining tracked systems and the wheel, adding internal structure, we invented a system that provides the **traction** of a tank, the **adaptability** of rubber and the capability of **space**.

THE CHALLENGES WE SURPASSED

Works without atmosphere

Non-pneumatic design allows full functionality in vacuum

Puncture proof

Thanks to its rigid external track, **yes**.

Radiation resistant

Complete **metallic** design

Adapts to weight

Internal mechanisms allow for both **passive** and **active** stiffness control

Adaptable design

Each aspect can be **tailored** to a specific use-case

Works in cryogenic temperatures

Tested down to **-240 C**

Tested

GRC-1 qualified, **1000**km on **regolith** lunar analog at 7km/h

TRL

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Why develop such a system?

Have you **compared** it to other systems?

The development of our prototype was made under a contract with ESA. After it's completion, we further refined and reviewed the design until we had something truly innovative and original.

It is impossible to re-invent something like...the wheel...and not draw comparisons to other designs. We have compared them in all aspects and manage to surpass most, if not all, of the other rover wheels on the market.

Has the system been **patented**?

Yes. A while ago.