

Antennas, Deorbit Sails,
Structures and Thermal H/W

In the **industrial space world**, the HPS Group - headed in Munich, with a daughter company in Bucharest (Romania), and a joint venture in Münchberg (Germany) - keeps its own position right in the middle between the many small and the few large enterprises:

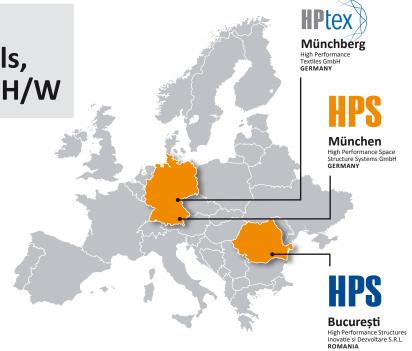
- self reliant and managed by owners
- strongly growing
- internationally present.

The capacities of the HPS Group are solidly rooted on four foundations:

- 1) acknowledged experts for project management, engineering (in many disciplines), material science, MAIT and quality assurance,
- 2) highly modern offices and extreme computing capacities & associated software in all HPS sites,
- 3) company-owned infrastructure for manufacturing, assembly and integration,
- 4) large network of European partner companies for special developments, production of all kinds of mechanical parts, material-characterisation & subsystem-tests.

Depending on the **customer's technology needs**, the respective HPS site acts as contractor. Large subsystem contracts are managed by the German site with specialized, high quality & cost efficient contributions from Romania and international partners.

Currently HPS's flight hardware is onboard of more than 20 ESA- & German missions, such as Copernicus-CIMR, LUNAR-GATEWAY, HERA, EUCLID, Heinrich Hertz, EnMAP, eROSITA, PROBA-3, CHEOPS, JUICE, BIOMASS, ALTIUS, SENTINEL-4, MTG, ExoMars 2016, ELECTRON (It's business time), ION (Wild Ride).



Product	HPS-DE	HPS-RO
Large Deployable Reflector Subsystems	•	0
Reflector Antenna Subsystems	•	0
Navigation Antennas	•	0
Lightweight Portable Ground Antennas	•	0
Deorbit Deployable Sail Modules	•	0
Deployable Arms	•	0
Composite Structure Subassemblies	•	-
Lightweight Secondary Structures	•	•
Optical Structure Assemblies	•	0
CFRP Electronic Housings	•	-
Isostatic Mounts	•	•
Metal Parts	•	•
3D-printed-/ALM-Parts	•	•
Thermal Straps and Thermal Washers	0	•
Multilayer Insulation MLI	•	•
Radiators and OSR Bonding Service	•	•
Radiation Protection	•	_
Metal Meshes for RF-Reflection	•	-
MGSE	•	•
Engineering & Integration Services	•	•

Turnkey delivery O Contribution via elements

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Main Product Portfolio

REFLECTOR ANTENNA SUBSYSTEMS (up to 2.4 m)







- Ka-Band Antennas (Telecom/Science)
- Q/V-Band Feeder Link Antennas
- Radar Reflector Antennas
- **Navigation Antennas**
- Mobile Ground Antennas
- **Cubesat Antennas**
- RF Components.

LARGE DEPLOYABLE REFLECTOR SUBSYSTEMS (3 m - 20 m)







- Large Deployable Antennas
- Deployable Reflector Subsystems
- Deployable Arms
- RF-Reflecting Metal Mesh
- Applications for Earth Observation & Telecommunication.

DEORBIT DEPLOYABLE SAIL MODULES







- Dragsails for Satellites and Launchers
- Deorbit of 1 kg up to 1,500 kg Applicability for LEO up to 900 km
- Product family of different sizes
- Autonomous deployment
- No need for active GNC.

LIGHTWEIGHT STRUCTURES







- Instrument Structures
- **Radiation Shielding Structures**
- CFRP Electronic Boxes
- Secondary/Tertiary Structures/Parts
- Composite Structures
- Nanotube Reinforced Structures
- 3D-Printed Components & Mass Dummies.

THERMAL HARDWARE







- **Metal Radiators**
- **OSR Bonding Service**
- Multilayer Insulation MLI
- High Temperature Insulation
- Thermal Washers
- Thermal Straps (copper & graphene).

MECHANICAL GROUND SUPPORT EQUIPMENT







- Assembly & Integration Stands Lifting & Hoisting Devices
- Turning Devices (also for therm. vacuum)
- Multi Purpose Adapters
- **Transport Containers**
- Purging GSE.

