

# Portuguese Space Catalogue 2023/24 - Industry

## Thank you for your participation in this survey

By answering this survey, you submit your data to the Portuguese Space Agency - Portugal Space, which will use it in the way it sees fit, namely for the purposes of preparing, updating and disseminating the Portuguese Space Catalogue and processing statistical data on the space sector. Apart from the indication of the contact person and the coordinator/CEO responsible, whose consent to the collection of the identification data for this purpose is expressly given, no personal data is expected to be collected. Any questions regarding the collection of personal data shall be addressed to the Portuguese Space Agency - Portugal Space (through [herminia.saraiva@ptspace.pt](mailto:herminia.saraiva@ptspace.pt)).

The Portuguese Space Catalogue aims to showcase Portuguese space related companies and research centres, promote their business, and increase the outreach of the Portuguese space ecosystem both within Portugal and internationally.

### General Notes:

To be considered for the Portuguese Space Catalogue 2023/24, the replies to the questionnaire must be finished by 20th February 2023.

Any reply submitted at a later stage will be used in future updates of the Catalogue.

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## Company Information and Domains

The domains and subdomains presented in this page (starting from question 20 to 48) were adapted from ESA technology tree version 4.0. You should select all that apply to your company.

\* 1. What is your company name?

\* 2. Provide an overview and description of your company (max 300 characters).

\* 3. Does your company have a motto? If so, please share it with us. If not, you can include a small phrase about space, Portugal and the future. Include the author of the quote, if it applies. This phrase will be present in your dedicated page (max. 60 characters)

\* 4. Where is your company located (HQ in Portugal)?

\* 5. Do you have other offices in Portugal? If yes, where?

\* 6. Do you have other offices outside of Portugal? If yes, where? If you are part of an international group please list all countries where you are present.

\* 7. What is your company year of creation? If it is a foreign company with offices in Portugal, please mention both the creation of the branch in Portugal and of the company.

Year of creation of  
the Portuguese  
branch:

Year of creation of  
the company:

\* 8. What is your company logo?

Please upload an image of your company logo with a transparent background (minimum 300 dpi; PNG, JPG or JPEG format).

Choose File

Choose File

No file chosen

\* 9. CEO

Name:

Email address (not  
to be disclosed):

\* 10. How can your company be reached?

Email Address:

Phone number:

Website:

Name of Space  
PoC:

Email Address  
PoC:

\* 11. Employees - General (not to be disclosed). Please provide **absolute numbers**.

Total

Total in Portugal

\* 12. Employees - Space in Portugal (not to be disclosed). Please provide **absolute numbers**.

Total of employees

in Space (in  
Portugal):

How many are  
women?

How many are  
foreigner?

How many have a  
PhD?

\* 13. Turnover 2022 (or if not possible, 2021. This information will not be disclosed). In case your company has offices outside of Portugal, please consider only the Portuguese company.

Total turnover  
(k€):

Turnover year:

% turnover related  
to space:

% space turnover  
from ESA projects  
(or as a  
subcontractor):

% space turnover  
from EU funding  
(EU Space  
Programme,  
Horizon Europe,  
PT2020/2030,  
PRR, others):

% space turnover  
from other space  
institutions (e.g.  
SKAO, EUMETSAT,  
ESO):

% space turnover  
from commercial  
contracts:

% other

14. Describe other sectors of activity (different from space) and please provide brief example for each one.

\* 15. Include a list (by order of relevance) and description of your main space related products (up to a maximum of three), and their TRL. If your product has integrated a mission, please mention it. If your company provides services, please describe them (max 90 characters for each product / service).

Product / Service 1:

Product / Service 2:

Product / Service 3:

\* 16. You can upload a first picture that illustrates your product/service here.

PNG, JPG or JPEG files only. Please make sure the file has a clear title.

Choose File

Choose File

No file chosen

17. You can upload a second picture that illustrates your product/service here.

PNG, JPG or JPEG files only. Please make sure the file has a clear title.

Choose File

Choose File

No file chosen

18. You can upload a third picture that illustrate your product/service here.

PNG, JPG or JPEG files only. Please make sure the file has a clear title.

Choose File

Choose File

No file chosen

\* 19. In case you have uploaded pictures, provide a title/caption and the copyrights for each one.

Picture 1 caption:

Picture 1  
copyrights:

Picture 2 caption:

Picture 2  
copyrights:

Picture 3 caption:

Picture 3  
copyrights:

\* 20. In the next questions, you will find a list of space domains. Please select if and only those which apply to your company.

General Domain

☐ Software

☐ Hardware

☐ Services

☐ Other (specify)

21. Onboard Data

Subsystems

☐ Payload data processing

☐ On-board data management

☐ Microelectronics for digital and analogue applications

☐ Machine Learning and Artificial Intelligence for On-board Data Subsystems

☐ Other (specify)

## 22. Space System Software

- ☐ Software technologies
- ☐ Space segment software
- ☐ Ground segment software
- ☐ Ground data processing
- ☐ Remote Sensing payload data exploitation
- ☐ Other (specify)

## 23. Space Systems Electrical Power

- ☐ Power electronics
- ☐ Power generation technologies
- ☐ Energy storage technologies
- ☐ Power conditioning and distribution
- ☐ Other (specify)

## 24. Space Systems Environments and Effects

- ☐ Space environment
- ☐ Environment effects
- ☐ Space weather
- ☐ Other (specify)

## 25. Space System Control

- ☐ Control (sub-) systems engineering
- ☐ Control (sub-) systems innovative technologies
- ☐ Control techniques and tools
- ☐ AOCS/GNC sensors and actuators
- ☐ Other (specify)

## 26. RF Subsystems, Payloads and Technologies

- ☐ Telecommunication subsystems
- ☐ Radio navigation subsystems
- ☐ TT&C and payload data transmitter (PDT) subsystems
- ☐ RF payloads
- ☐ RF technologies and equipment
- ☐ Other (specify)

## 27. Electromagnetic Technologies and Techniques

- ☐ Antennas
- ☐ Wave interaction and propagation
- ☐ Electromagnetic and Radio Frequency Compatibility (EMC/RFC) and Electrostatic Discharge (ESD)
- ☐ Other (specify)



## 28. System Design & Verification

- ☐ Mission and system specification
- ☐ Collaborative and concurrent engineering
- ☐ System analysis and design
- ☐ System verification and Assembly, Integration and Test (AIT)
- ☐ Other (specify)

## 29. Mission Operation and Ground Data systems

- ☐ Advanced system and mission operation concepts
- ☐ Mission operations
- ☐ Ground data systems
- ☐ Other (specify)

## 30. Flight Dynamics and GNSS

- ☐ Flight dynamics (FD)
- ☐ GNSS high-precision data processing
- ☐ Other (specify)

## 31. Space Debris

- ☐ Ground- and space-based debris and meteoroid measurements
- ☐ Modelling and risk analysis
- ☐ Debris mitigation
- ☐ Debris remediation and protection
- ☐ Other (specify)

### 32. Ground Station System and Networks

- ☐ Ground station system
- ☐ Ground communications networks
- ☐ Other (specify)

### 33. Automation, Telepresence & Robotics

- ☐ Applications and concepts
- ☐ Automation & robotics systems and subsystems
- ☐ Automation & robotics components and technologies
- ☐ Other (specify)

### 34. Life & Physical Sciences

- ☐ Instrumentation in support of life sciences
- ☐ Instrumentation in support of physical sciences
- ☐ Applied life science technology
- ☐ Other (specify)

### 35. Mechanisms

- ☐ Mechanism core technologies
- ☐ Non-explosive release technologies
- ☐ Exploration tool technologies
- ☐ Control electronics technologies
- ☐ MEMS technologies
- ☐ Tribology technologies
- ☐ Mechanism engineering
- ☐ Pyrotechnic technologies
- ☐ Flexible capture mechanisms
- ☐ Other (specify)

### 36. Optics

- ☐ Optical sunsystem engineering
- ☐ Optical components technology and materials
- ☐ Optical equipment and instrument technology
- ☐ Other (specify)

### 37. Optoelectronics

- ☐ Laser technologies
- ☐ Detector technologies
- ☐ Photonics
- ☐ Optical communication technologies
- ☐ Flight demonstrators and flight data tools
- ☐ Other (specify)

### 38. Fluid Dynamics

- ☐ Fluid dynamics tools and techniques
- ☐ Ground-based facilities
- ☐ Sensors and measurement techniques for fluid dynamics
- ☐ Flight demonstrators and flight data tools
- ☐ Other (specify)

### 39. Propulsion

- ☐ Chemical propulsion technologies
- ☐ Electric propulsion technologies
- ☐ Other propulsion subsystems
- ☐ Supporting propulsion technologies and tools
- ☐ Other (specify)

#### 40. Structures

- ☐ Structural design and verification methods and tools
- ☐ High-stability and high-precision spacecraft structures
- ☐ Inflatable and deployable structures
- ☐ Hot structures
- ☐ Active/adaptive structures
- ☐ Damage tolerance and health monitoring
- ☐ Launchers, reentry vehicles, planetary vehicles
- ☐ Crew habitation, safe haven and EVA suits
- ☐ Meteoroid and debris shield design and analysis
- ☐ Advanced structural concepts and materials
- ☐ Other (specify)

#### 41. Thermal

- ☐ Heat transport technology
- ☐ Cryogenics and refrigeration
- ☐ Thermal protection
- ☐ Heat storage and rejection
- ☐ Thermal analysis tools
- ☐ Other (specify)

#### 42. Environmental Control Life Support (ECLS) and In Situ Resource Utilisation (ISRU)

☐ Environmental Control Life Support (ECLS)

☐ In Situ Resource Utilisation (ISRU)

☐ Other (specify)

#### 43. Electric, Electromechanical & Electronic (EEE) Components and quality

☐ Methods and processes for product assurance of EEE components, including radiation hardness assurance

☐ EEE component technologies

☐ Other (specify)

#### 44. Materials and Manufacturing Processes

☐ Novel materials and materials technology

☐ Materials processes

☐ Cleanliness and sterilisation

☐ Ground and Space environmental effects on materials and processes

☐ Modelling of materials behaviour and properties

☐ Non-destructive inspection (NDI)

☐ Materials and process obsolescence

☐ Materials for electronic assembly

☐ Advanced manufacturing technologies

☐ Reliability and reusability aspects of materials

☐ Other (specify)

45. Quality, Dependability and Safety

- ☐ System Dependability and Safety
- ☐ Software quality
- ☐ Product and quality assurance
- ☐ Commercial off-the-shelf components and subsystems
- ☐ Other (specify)

46. Others - please specify:

47. Services (please fill only those that apply and specify what kind of data is used)

Earth Observation  
(specify):

Telecommunications  
(specify):

Satellite  
Navigation  
(specify):

Other (specify):

\* 48. Select at least one and a maximum of three **most relevant** domains for your company.

- ☐ Onboard Data Systems
- ☐ Space System Software
- ☐ Spacecraft Electrical Power
- ☐ Spacecraft Environments and Effects
- ☐ Space System Control
- ☐ RF Systems, Payloads and Technologies
- ☐ Electromagnetic Technologies and Techniques
- ☐ System Design & Verification

- ☐ Mission Operation and Ground Data systems
- ☐ Flight Dynamics and GNSS
- ☐ Space Debris
- ☐ Ground Station System and Networks
- ☐ Automation, Telepresence & Robotics
- ☐ Life & Physical Sciences
- ☐ Mechanisms
- ☐ Optics
- ☐ Optoelectronics
- ☐ Aerothermodynamics
- ☐ Propulsion
- ☐ Structures
- ☐ Thermal
- ☐ Environmental Control Life Support (ECLS) and In Situ Resource Utilisation (ISRU)
- ☐ EEE (electric, electromechanical & electronic) Components and quality
- ☐ Materials and Processes
- ☐ Services
- ☐ Other (specify)

\* 49. List your main clients (this information will not be disclosed).

50. List your relevant certifications.



51. Is there any other information you would like to share? (Max. 150 characters)

## **Portuguese Space Catalogue 2023/24 - Industry**

**You have reached the end of this questionnaire.  
Thank you for your participation.**

Any questions you may have can be directed to the Portuguese Space Agency -  
Portugal Space by contacting:

[herminia.saraiva@ptspace.pt](mailto:herminia.saraiva@ptspace.pt)

[nuno.gomes@ptspace.pt](mailto:nuno.gomes@ptspace.pt)