

**SPACELABS**  
engineeringLAB

$$+ P_1 + V_1 =$$

$$K = 1 - \sum_{n=1}^{\infty} \frac{1}{(2n-1)^5} \cdot \frac{100}{\pi^n}$$

$$1) T = 273,15K$$

$$1) p_0 (k+1)!$$

# ENGINEERING SOLUTIONS

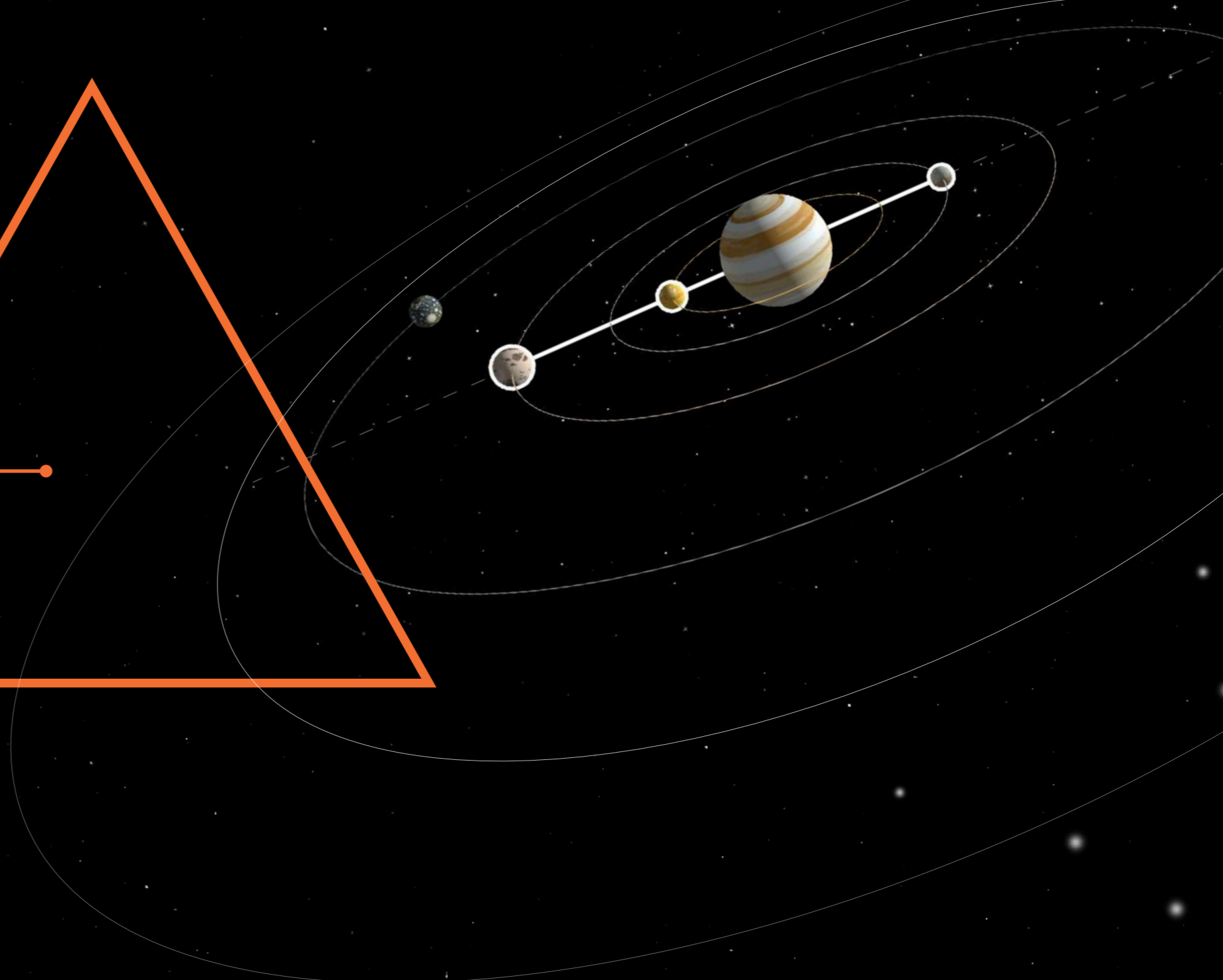
BASED ON

- Experience
- Innovative thinking
- Flexible interaction

ATG **engineering**LAB is a multi-disciplinary, highly educated and deeply committed Business Unit, part of the SpaceLabs division

Our Lab is in the forefront of the European Space Industry offering **specialised support in technical reviews, high-tech machinery and instrumentation, mechanisms, mechanical design, structural and thermal product development.**

We provide our clients and stakeholders with a variety of offerings from engineering services to fully engineered solutions and products.





# THE NEEDS

As a product owner and user, you need a reliable partner in the development, verification, and qualification of your products. You need the right design to be developed to manage quality, timing and budget challenges and assure a successful product function and business case, be it for new space or conventional missions.



# THE SOLUTION

- 🔗 engineeringLab provides a portfolio of offerings, each a different flavour of how we address the direct need or ensure the verification of the customer's need
- 🔗 Design and delivery of fully optimised high-end thermal and mechanical systems/mechanisms
- 🔗 Reliable verification through modelling, analysis and testing, based on both industry-standard and bespoke in-house methods and tools
- 🔗 Technology, product and method co-R&D as equal partners
- 🔗 Product Reviews for customers and their stakeholders
- 🔗 Digitisation and virtualisation of engineering processes, through our collaboration with ATG virtualLAB.

# WHAT WE OFFER

Decades of experience in both conventional missions (e.g. MetOp, MeteoSat, EnviSat, EUCLID, PLATO) and more recent commercial space programmes involving CubeSats and MicroSats mean we can tailor the desired solution, being both pragmatic and thorough where needed.

We provide our services and products both on total satellite level as well as on specialized technological areas such as Optical and RF instruments/units, Electronic Units, Propulsion, ADCS, Structures and Thermal Control systems.



## The main features of our services and products are:

### COMPLETE COVERAGE OF THERMAL AND STRUCTURAL DRIVERS

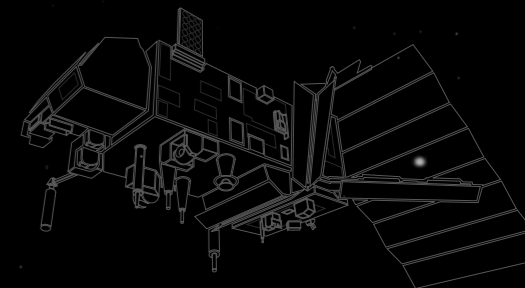
The team can handle all thermal control scenarios from high reliability survival needs to fine thermal stability control as well as all structural design drivers, from Thermo-Elastic stability through standard statics & dynamics to high pressure loads and Vibro- Acoustics. We ensure that designs are reliably analysed and optimised, and that the manufactured systems are reliably tested based on decades of test preparation, execution and processing experience.

### FRONT-RUNNERS IN THERMO-ELASTIC DESIGN & VERIFICATION

engineeringLAB works with and for ESA on several development and research activities regarding Thermo-Elastic analysis methodologies and guidelines and has published independent research. These state of art and novel Thermo-Elastic design and analysis methodologies are incorporated in our daily work for all customers and partners, providing next level confidence and efficiency

### MULTIDISCIPLINARY OPTIMISATION

Given the broad set of competences in the team we can optimise multi-functional parts for all relevant multi-disciplinary drivers; using both computational topology, shape and size optimisation as well as human insights from decades of experience; we know how to set up the optimisation problem to find the fundamentally best, lightest and most cost-effective solution.



phase  
**A-D/E**

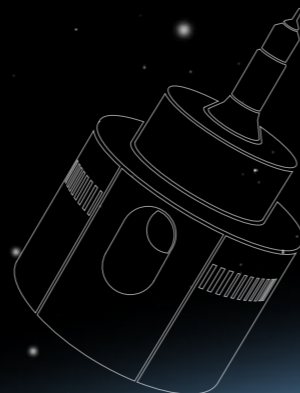
FULL SYSTEM LIFE CYCLE  
DESIGN AND ANALYSIS

**$\min f(x)$**

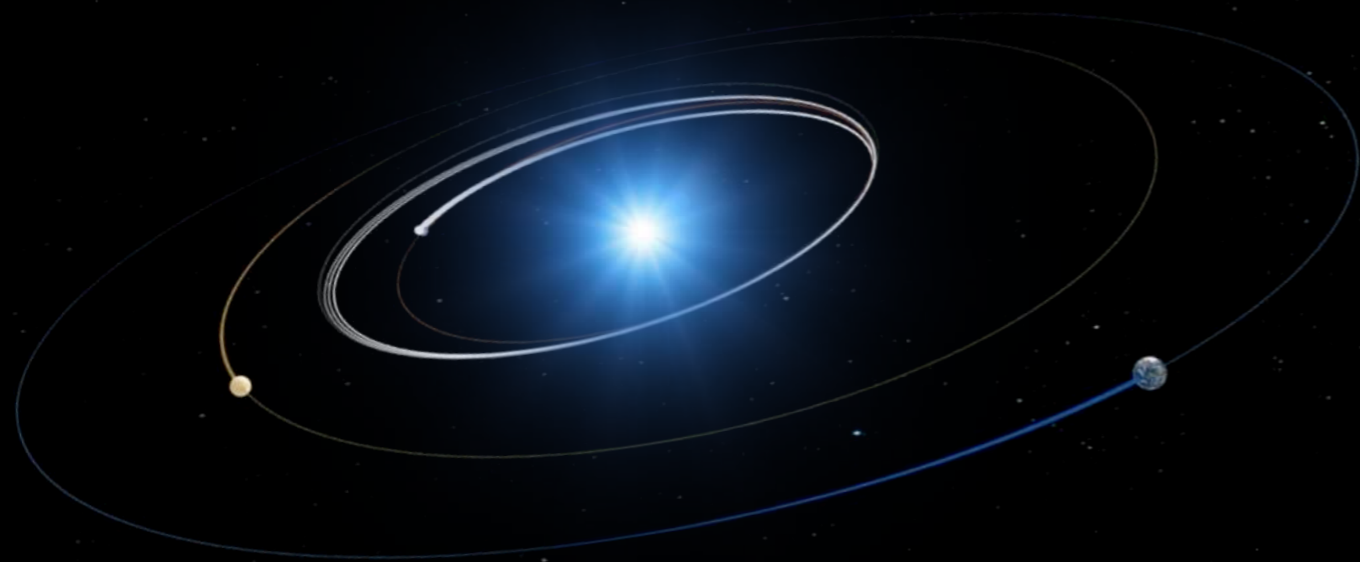
OPTIMISATION FOR BUSINESS  
AND TECHNICAL OBJECTIVES

**100%**

HANDLING OF ALL THERMAL,  
STRUCTURAL AND FUNCTIONAL DRIVERS



# WHAT OUR CUSTOMERS SAY

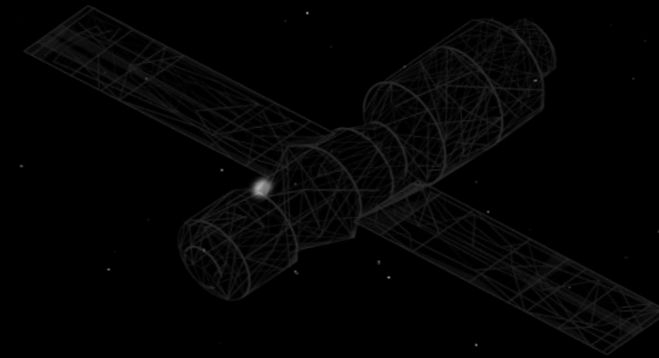


“The key to success was ATG’s agility; updating the objectives and approach with us during the process and ensuring that the results were ready at key decision moments.”

“I have to congratulate ATG because the datapackage was close to perfection.”

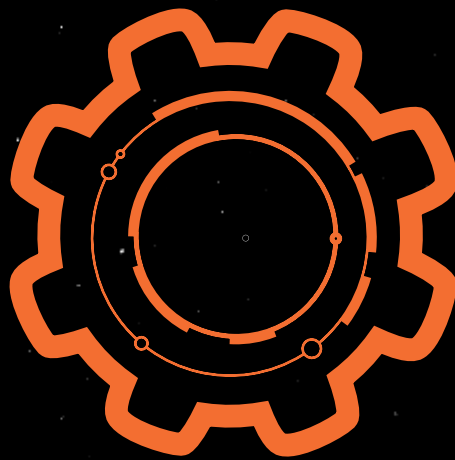


“During the total project, we have felt strongly supported and off-loaded by ATG’s dedication, agility and ability to professionally interface with our own staff, our customer chain, the Agency and our suppliers.”



# SPACELABS

engineeringLAB



## ATG EUROPE

Space Business Park  
Huygensstraat 34  
2201 DK Noordwijk,  
The Netherlands

## ATG INNOVATION

Office 11 & 12, Level One, Unit 8  
Galway Technology Park  
Parkmore, Galway,  
Ireland

[contactus@atg-europe.com](mailto:contactus@atg-europe.com)  
[WWW.ATG-EUROPE.COM](http://WWW.ATG-EUROPE.COM)

