# Study @ISAE-SUPAERO
## (as a Partner University Student)

Sept. 2023

ISAE
Institut Supérieur de l'Aéronautique et de l'Espace
SUPAERO

# Study @ISAE-SUPAERO
# as a Partner University Student

## Program

- Excellence : a world class actor in education and research
- Testimony Anthea Comellini
- Academics
- Research innovation & Entrepreneurship
- Student Life
- Industrial Environment
- Apply & Study @ISAE-SUPAERO
- Q&A

## Speakers

Prof E. Zenou
Head of International

A. Comellini
Alumni / ESA Reserve Astronaut

D. Morice
Student mobility

# Study @ISAE-SUPARO

1

## Excellence

A world class actor

in education and research

2

## Academics

Your success is our priority

3

## Research, Innovation & Entrepreneurship

Scientific excellence,

academic visibility

& leading-edge technology

4

## Student Life

Welcome to

our outstanding campus

5

## Industrial Environment

Toulouse

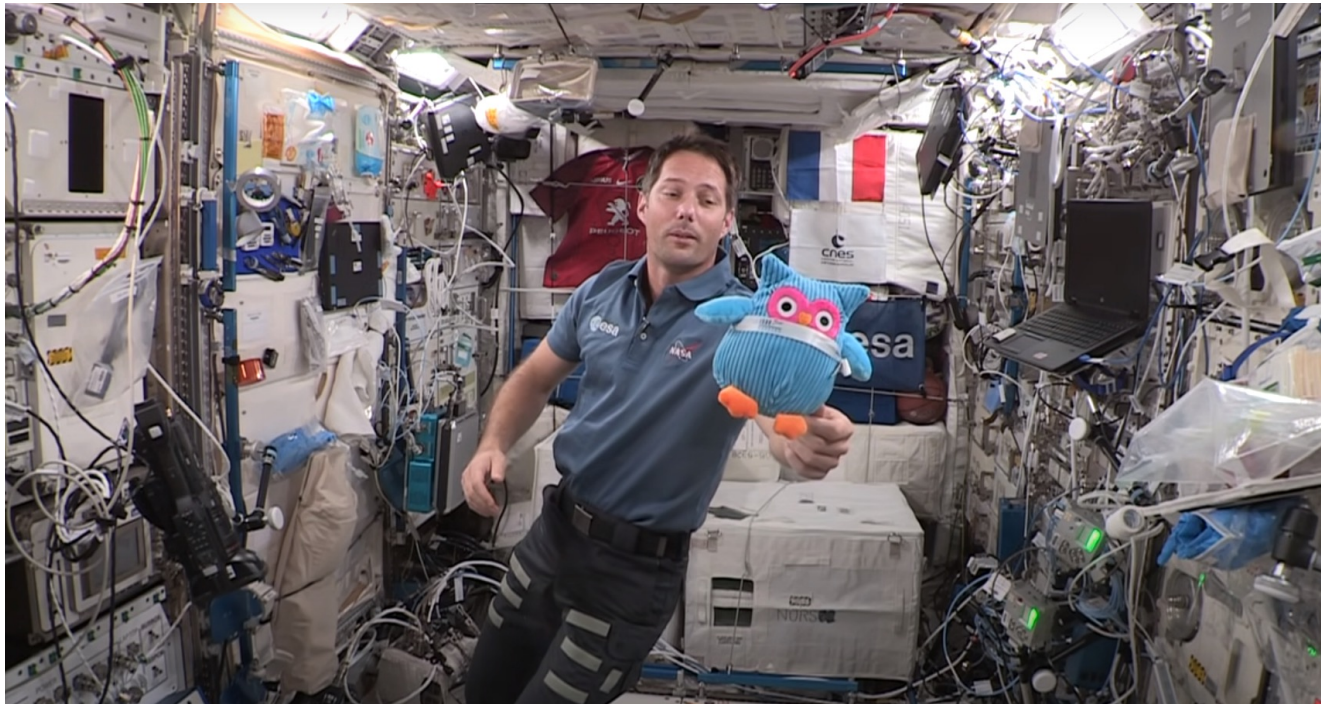
Capital of aerospace

6

## Apply & Study @ISAE-SUPAERO

Join us !

# EXCELLENCE



# Key Figures at a Glance

# A few of our Alumni

**ELODIE VIAU (M2008)**
Director of Telecommunications and Integrated Applications at the European Space Agency

**JUAN CANTILLO (S2004)** Senior Exploration Advisor at TotalEnergies, Manager of LNG exports to Japa

**GUILLAUME FAURY (S1992)**
CEO AIRBUS

**AUDE VIGNELLES (E1991)**
Chief Technology Officer at the newly created Australian Space Agency

**OUSSAMA KHATIB (D1980)**
Full Professor at Stanford University, Director of the Robotics Laboratory

**Angélica CARDENAS SIERRA**
R&T Coordinator for Aerostructures Procurement at Airbus

**GIUSEPPE CATALDO**
NASA Planetary Protection Lead for the last mission of NASA-ESA's Mars Sample Return

**PRIYANKA DAS RAJKAKATI (S2017-D2021)**
Aerospace engineer & Artist, awarded Forbes India 30 under 30

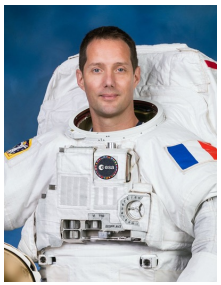
**OLIVIA DRAYSON (M2019)**
PhD student in Environmental Toxicology at the University of California Irvine

# Sky is Not the Limit

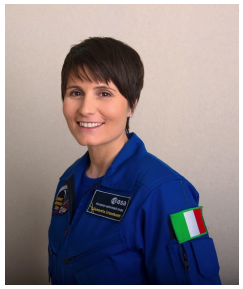
## 1992 ESA selection

**Jean-François Clervoy**, France,
675 hours in space,
SUPAERO 1983

## 2009 ESA selection



**Thomas Pesquet**, France,
SUPAERO 2001



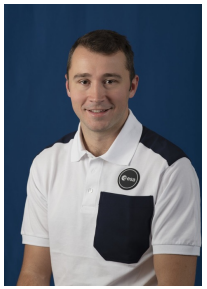
**Samantha Cristoforetti**, Italy,
Erasmus SUPAERO 2007

**Luca Parmitano**, Italy,
PMP in experimental flight test engineering,
SUPAERO 2009

## 2022 ESA selection

**Sophie Adenot** ,France,
SUPAERO 2004

## 2022 ESA reserve astronaut selection



**Arnaud Prost** ,France,
SUPAERO 2017

**Anthea Comellini**, Italy,
SUPAERO 2017 PhD 2021

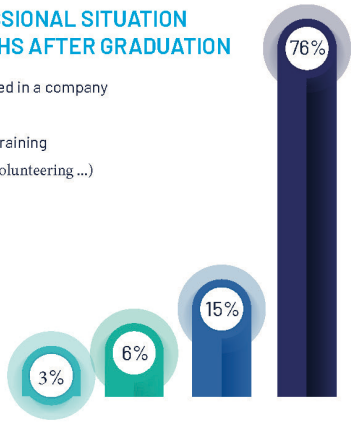
# Our Sudent's employability

**79 %** found their first job before graduating

**90 %** are happy or very happy with their first job

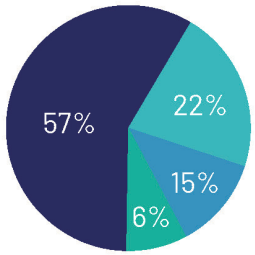
## PROFESSIONAL SITUATION 4 MONTHS AFTER GRADUATION

- Employed in a company
- PhD
- Study/Training
- Other (volunteering ...)




## COMPANY SIZE

- Large-sized companies
- Mid-sized companies
- Small-sized companies
- START-UPS/VSB

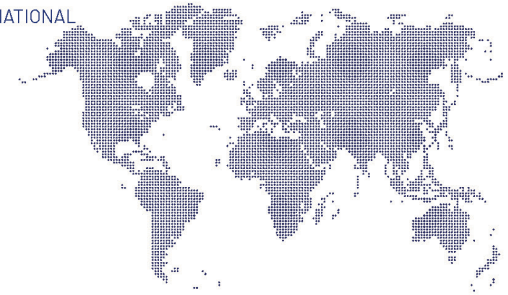



## LOCATION

**85%** IN FRANCE

- **40%** PARIS AREA
- **33%** OCCITANIE
- **27%** OTHER REGIONS

**15%** INTERNATIONAL



## EMPLOYER BUSINESS SECTORS

- 41,5% Aerospace & Defense
- 13% Consulting & Engineering
- 12% IT
- 11% Strategy/Management Consulting
- 7% Energy
- 4,5% Finance/Auditing/Insurance
- 1% Urban Planning
- 1% Teaching/Research
- 1% Naval
- 1% Arts, Performance & Leisure Activities
- 7% Other fields

## RECRUITERS

AIRBUS
GROUPE DASSAULT
SAFRAN
THALES
Capgemini engineering
EDF

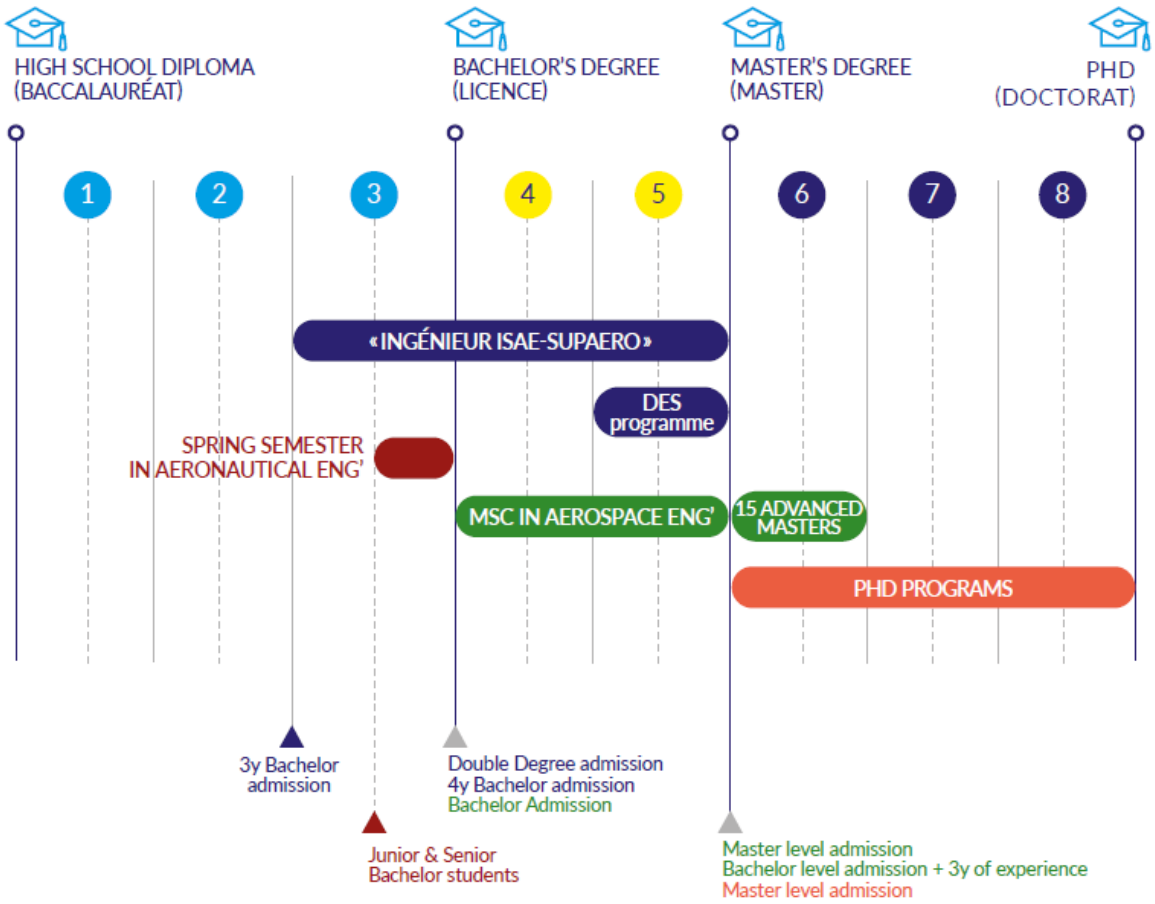
## AVERAGE SALARY (bonuses and benefits included)

**50K€** IN PARIS AREA

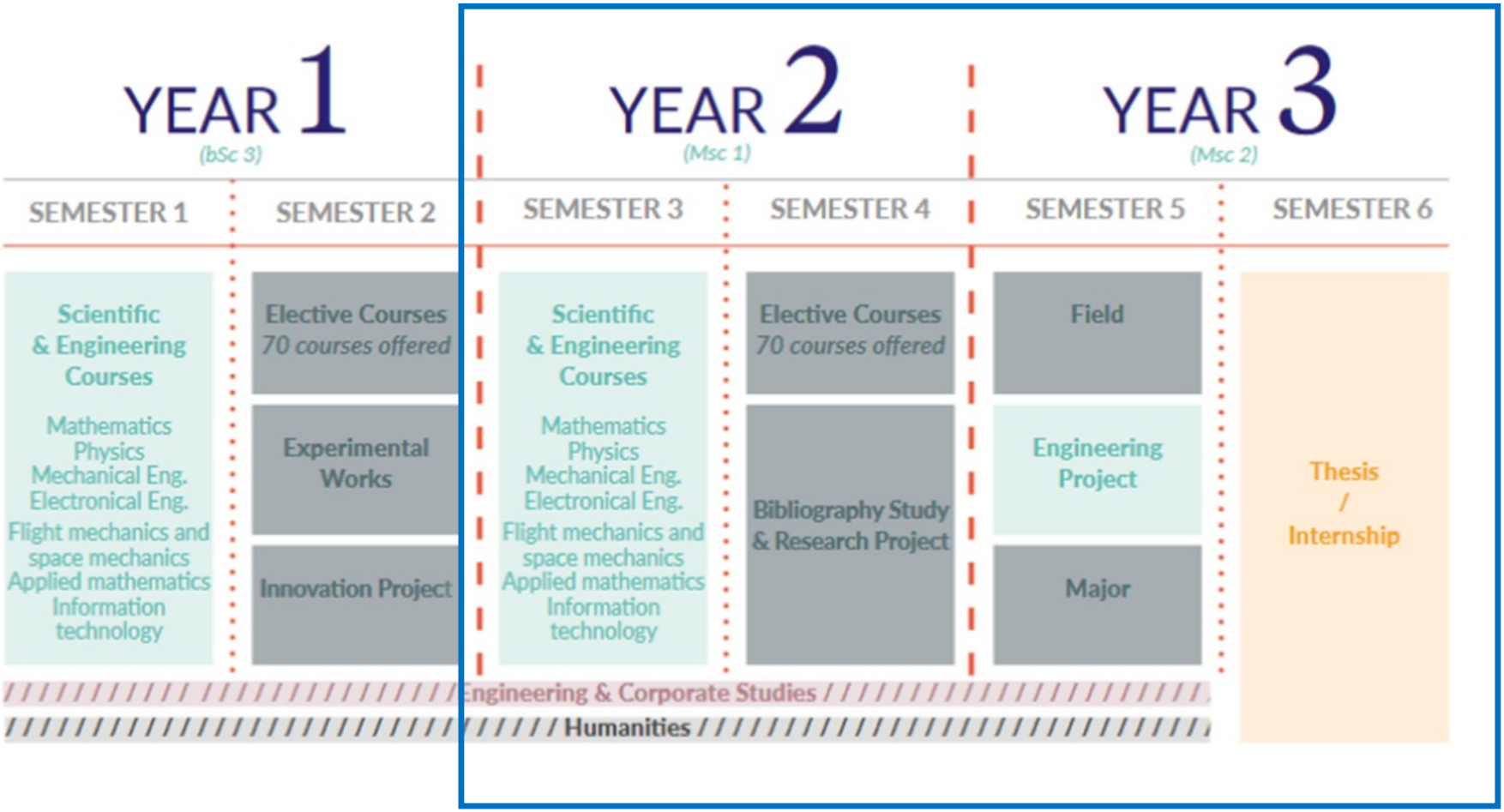
**45,8K€** IN FRANCE

# ACADEMICS

# ISAE-SUPAERO Programs & Bologna Process



# « Ingénieur ISAE-SUPAERO »



# « Ingénieur ISAE-SUPAERO »

**Motto: « Excellence with Passion »**

| Fundamental courses | Mechanical engineering | Electrical Engineering Course | Systems & Projects | Humanities | Economics and management |
|---|---|---|---|---|---|
| Applied maths | Aerodynamics | Control Theory | System Engineering | Arts & Cultural studies | Economics |
| Physics | Propulsion | Telecommunications | Functional Design | Languages & Communication | Finance |
| Space science | Energetics | Signal processing | Space Systems | Sports | Management |
| ... | Structures | Image processing | Embedded Systems | ... | ... |
| | Materials | ... | Research projects | | |
| | ... | | ... | | |

Download brochure

# « Ingénieur ISAE-SUPAERO » Fields & Majors

**Field (Domaine) 140 hrs**

**Major (Filière) 240 hrs**

+

+

**Interdisciplinary Engineering Project (80hr)**

4-to-6 Student Project

Project Mgmt

# RESEARCH, INNOVATION & ENTREPRENEURSHIP

# Research @ISAE-SUPAERO

**DAEP:** Aerodynamics, Propulsion & Energetics

**DMSM:** Structures & Materials

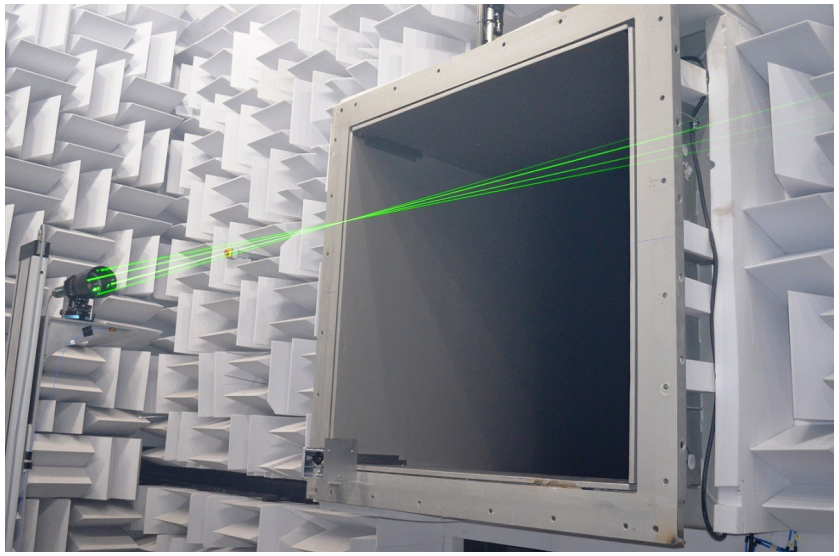
**DISC:** Applied Math, Computer Science, Embedded Systems, Networks, System Engineering, Data Science…

**DEOS:** Electronics, Optronics, Signal Processing, CMOS Sensors…

**DCAS:** Aerospace Systems, Control…

**LACS:** Languages & Humanities

# Academic & Research Facilities

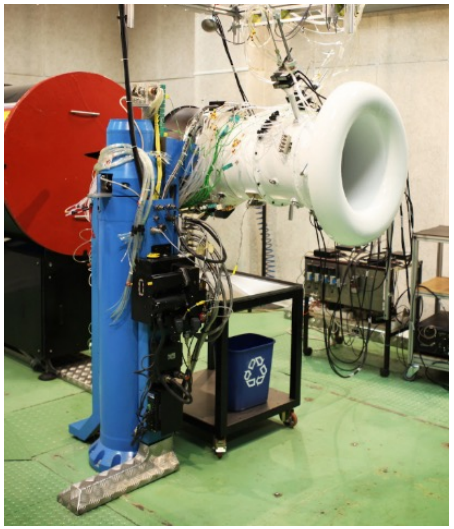


AeroAcoustic Wind Tunnel

| | |
|---|---|
| Dimension (test section) | 180 cm x 180 cm |
| Speed | from 20 to 80 m/s |
| Cut-off frequency | 200 Hz |

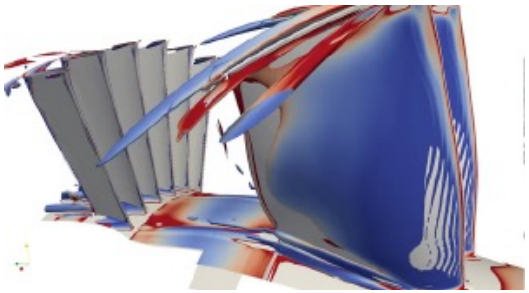
Low-Reynolds Wind Tunnel
Perfect 2 m/s
120 cm x 80 cm test section

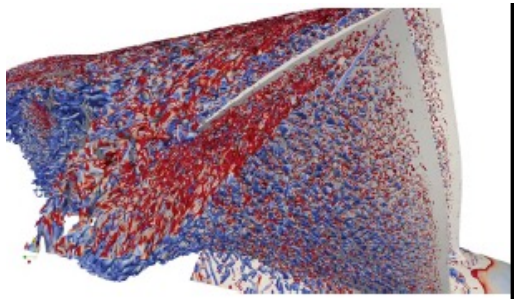
# Academic & Research Facilities

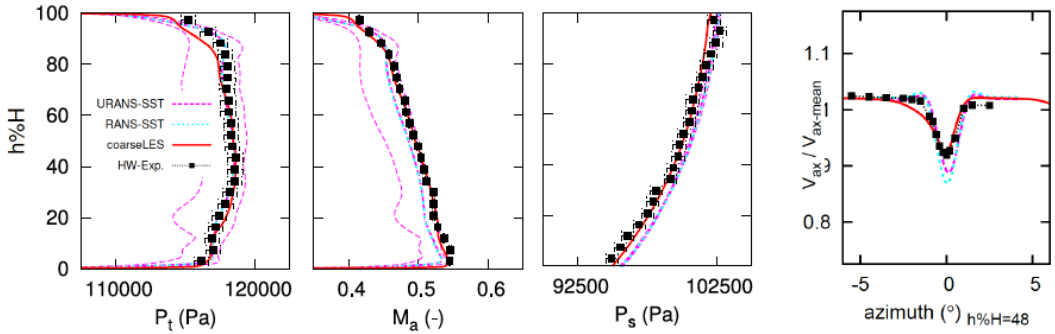


DGEN 380 TurboJet
Propulsion Test Bench
250 daN Thrust
Bypass ratio 6
SFC 0.5 kg/h/daN

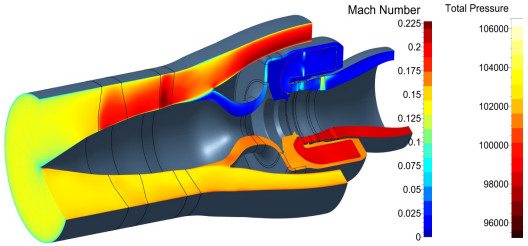
LES Computation/Validation – IC3 in-house code

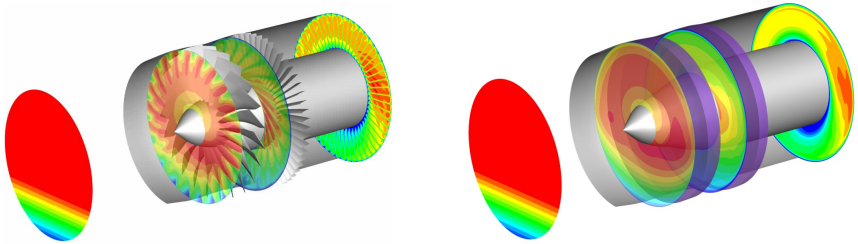







Low fidelity
Body Forces Modelling
Full engine



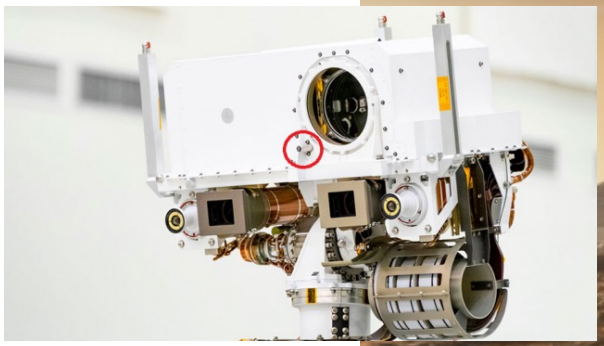



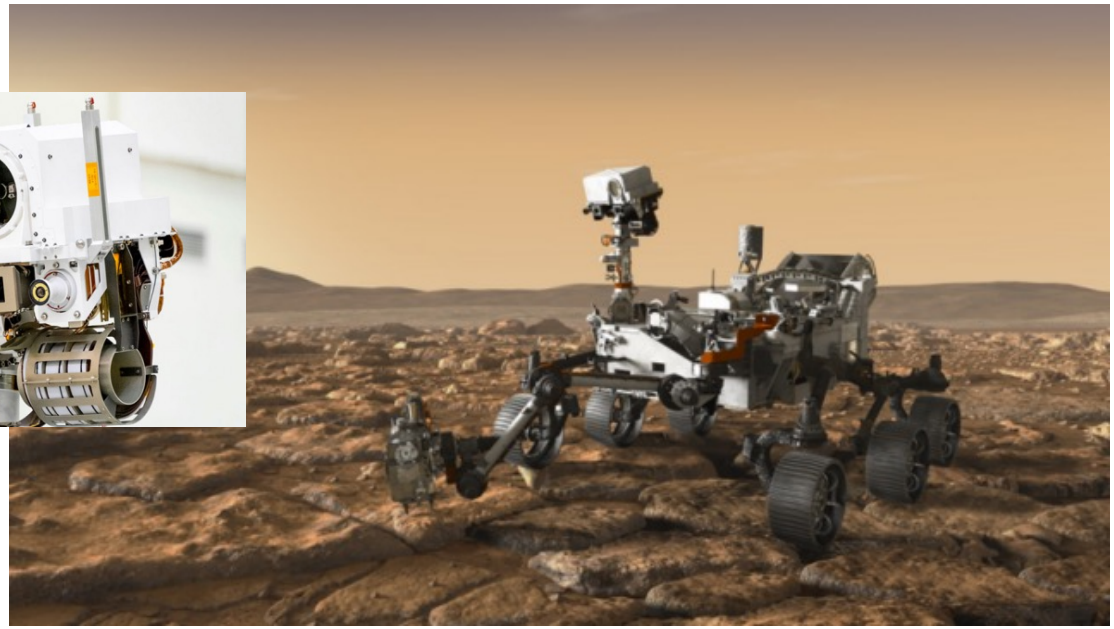
# Focus on

**PERSEVERANCE & SUPERCAM**

A **world first**: hearing the sounds of planet mars through a microphone made at ISAE-SUPAERO

APRIL 2022:
Publication in “Nature” science journal of the analyses of Martian sounds





# Focus on

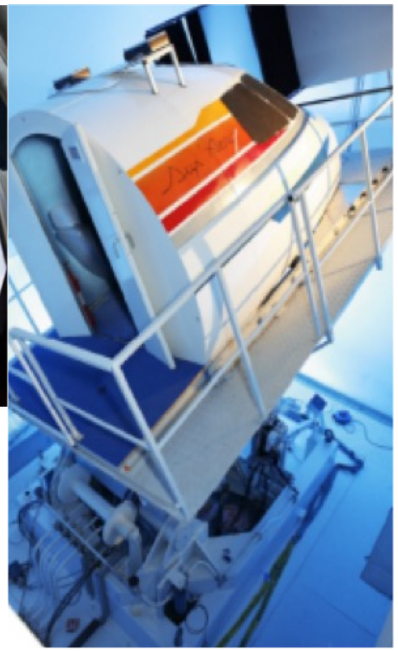
**DART PROJECT** (Double Asteroid Redirection Test)

A team of isae-supaero researchers takes part in the **first international planetary defence mission**!

The aim of the mission is to launch a missile probe that will crash into the near-Earth asteroid Dimorphos to modify its orbit and thus test our ability to avoid collisions with the Earth.

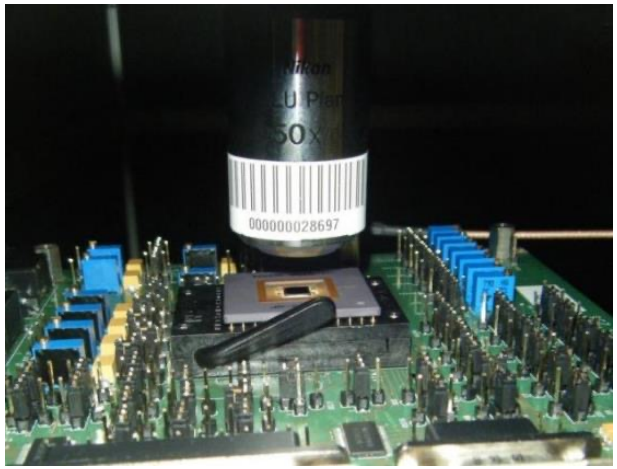
# Academic & Research Facilities

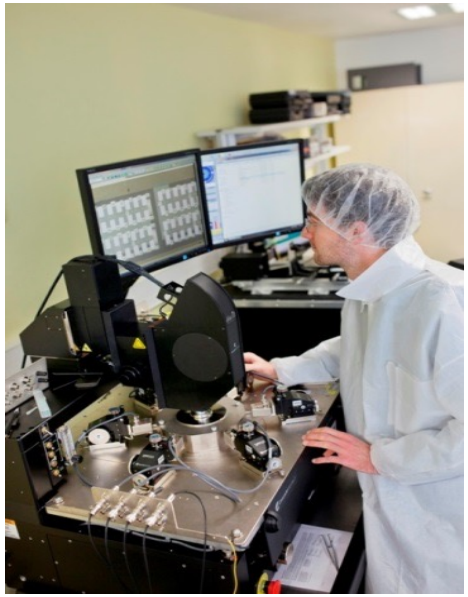
**Fleet of 10 aircrafts**
Instrumented TB20
Robin DR 400
Aquila…

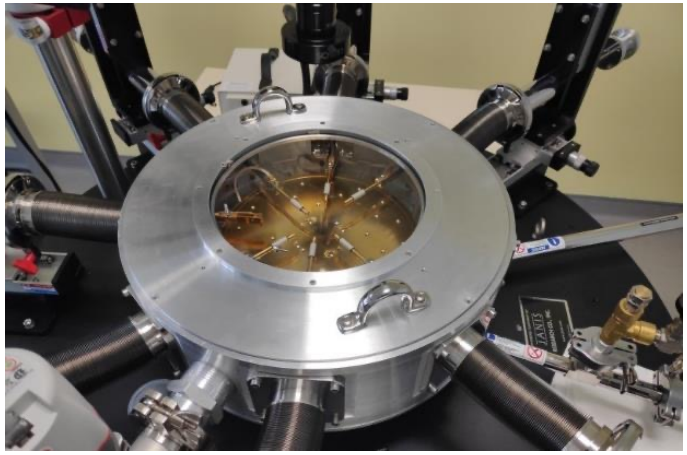


**Two Flight Simulators**
For Human Machine Interface design
&
Flight Dynamics

# Cutting-edge research equipment





# Build a safe and sustainable society

**Ecological and societal transition**

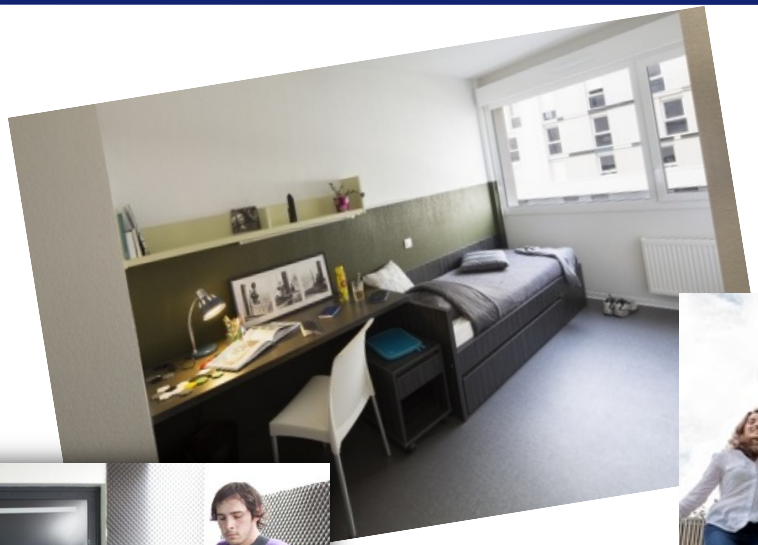
ISAE-SUPAERO In the top 3 of the most committed institutions in the ecological and societal transition, and fisrt for “training”

ISAE-SUPAERO publishes its aviation and climate reference

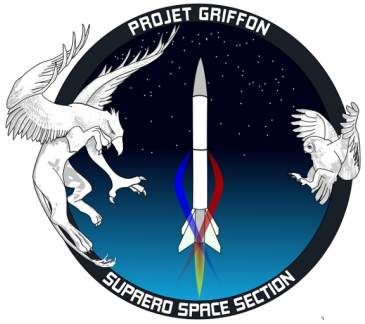
# STUDENT LIFE

# Toulouse has it all !

# Campus Life



# ISAE-SUPAERO Student Clubs…



All clubs…

# International connections

# Toulouse: European Capital for Aerospace Activities

More than 100 000 jobs in the aeronautics and space sector

More than 100 000 students at l'Université Fédérale de Toulouse

# Academic Environments: Other Laboratories

MEDES

ONERA
THE FRENCH AEROSPACE LAB

CNRS LAAS

Institut Clément Ader

IMFT
INSTITUT DE MECANIQUE DES FLUIDES DE TOULOUSE

Laplace

CERFACS

# Industrial Strategic Partnerships

# Academic Network

Founding Member of « University of Toulouse »

Université de Toulouse

**115,000 students, 4,100 PhD students, 6,000 researchers**

PEGASUS

**30 European aerospace universities in 12 countries, 3000 graduates per year**

UNIVERSEH

**5 universities, 5 countries, 144 000 students and staff**

T.I.M.E. Top International Managers in Engineering

**59 members in 25 countries**

# Apply and Study at ISAE-SUPAERO

# APPLY & STUDY @ISAE-SUPAERO

- Double degree
- Exchange semester(s)
- Research project
- Free mover

Many ways to study @ISAE-SUPAERO

# APPLY & STUDY @ISAE-SUPAERO

- Double degree
- Exchange semester(s)
- Research project
- Free mover

**You have to be selected by your University**

=> Contact your University first!

Two selection committees:

1. **October 2023**:
   - Double degree (early selection for EIFFEL Scholarship)
   - Exchange semester (spring semester Year 2)

2. **April 2024**:

Double degree

Exchange semester(s) (Year 2 and Year 3)

# APPLY & STUDY @ISAE-SUPAERO

- Double degree
- Exchange semester(s)
- Research project
- Free mover

**If nominated for the double degree…**

- An application link will be sent to you
- Application deadline: **October 15th, 2023**
- Required documents : Transcripts of Records from all previous academic years / Motivation Letter in French / Resume/CV in French / ID/Passport

French level certificate (B1) is required, you can provide it later.

Double degree students will have access to an intensive French course in August 2024

Contact email: incoming.df@isae-supaero.fr

# APPLY & STUDY @ISAE-SUPAERO

- Double degree

  1 or 2 semester(s) during the **2nd year** of our Engineering program (semesters 3 and/or 4)

  1 semester during the **3rd year** (semester 5)

- Exchange semester(s)

  For 1 year-long mobility during the 3rd year (semesters 5 and 6)

- Research project

  - Thesis only in an ISAE-SUPAERO lab
  - Thesis / internship in an industrial partner: fee-paying DES Diploma program

- Free mover

# APPLY & STUDY @ISAE-SUPAERO

- Double degree

  Potentially granted for a research project in one of our labs

- Exchange semester(s)

  You have to be chosen by one professor

- Research project

  [Link]

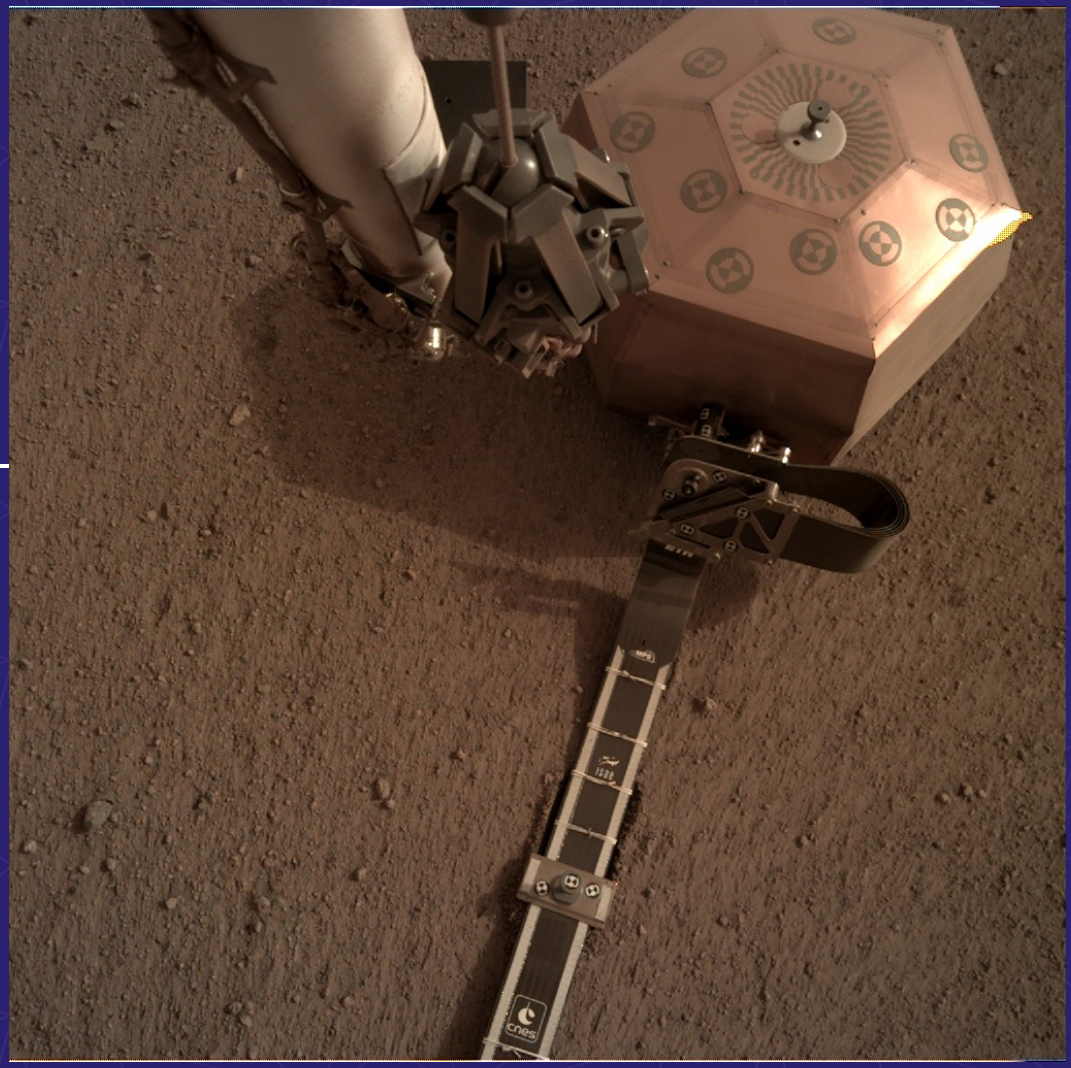
- Free mover

# TESTIMONY

isae
Institut Supérieur de l'Aéronautique et de l'Espace
SUPAERO

# Thank you
# for your attention

## Questions ?



**Institut Supérieur de l'Aéronautique et de l'Espace**

10, avenue Edouard Belin – BP 54032
31055 Toulouse Cedex 4 – France
T +33 5 61 33 80 80

**www.isae-supaero.fr**