

# Internship / Thesis – Mechatronics & Control (M/F)

2020-008-BE-SYS-RMS-CSINT



Space Applications Services is a company based in the Brussels area (BE) that provides products and services for the space sector in many areas from Avionics, Robotics, Human Exploration, Science and Earth Observation.

The successful intern will be based in our main office at Sint-Stevens-Woluwe (Brussels Area).

The internship/thesis is in the Systems Department, Robotics, Mechanisms & Structures (RMS) Team. The Team is responsible for the design, development, and testing of robotic systems for orbital and planetary applications.

The candidate will mainly report to the RMS Team Lead.

The team is seeking first or second year Master's students interested in joining our team as an intern. As a Mechatronics & Control intern, you will develop, test and validate control software for a wide variety of applications. Past projects developed by the team include an upper body exoskeleton with force feedback used to teloperate underwater vehicles, exercise devices for astronauts in space and a prototype moon rover.

We are currently considering interns for the following projects:

- Development of whole-body control algorithm for the LUVMI-X moon rover and investigation of innovative control strategies to improve the mobility of the system (e.g. Wheel Force Control or Wheel Walking).
- Development and demonstration of a real-time bilateral telemanipulation system connecting a cobot haptic arm with our in-house robotic exoskeleton.
- Implementation of a force control algorithm for the next-generation of robot-assisted exercise devices for astronauts and implementation of the control logic required to perform specific training exercises on the device with support from space medicine experts.

Other internship opportunities may be discussed on a case-by-case basis depending on the skills and interests of the intern.

## Tasks and Responsibilities

Duties for technical internships typically include a selection of the following:

- Literature review to identify the current state of the art for the task
- User studies to understand the needs and requirements of the potential operators of the system
- Familiarisation with in-house software components to explore code-reuse possibilities
- Design, development and testing of the system
- Development of demonstration scenarios
- Participation in analogue test campaigns to validate the performance of the system
- Production of documentation to communicate progress and current status to stakeholders.

### Space Applications Services NV/SA

Leuvensesteenweg 325  
1932 Sint-Stevens-Woluwe  
(Brussels Area)  
Belgium

+32 (0)2 721 54 84

info@spaceapplications.com  
jobs@spaceapplications.com

www.spaceapplications.com  
www.icecubesservice.com  
www.aerospaceapplications-na.com

# Internship / Thesis – Mechatronics & Control (M/F)

2020-008-BE-SYS-RMS-CSINT



## Qualifications and Experience

Depending on the Thesis/Internship's scope of work, a selection of the following is desirable:

- On-going Master in robotics, mechatronics, software engineering, or equivalent
- A background in control theory and practical experience developing control systems
- Strong programming skills (C++, Python) in a Linux environment
- Experience with the ROS framework or other robotics middleware systems
- Experience with git or other source code management systems.

## Interns will have the following skills

- Ability to:
  - Synthesise, summarise and draw conclusions
  - Adhere to strict standards of confidentiality
  - Work in distributed international teams
- Strength to cope with schedules and deadlines
- Excellent organisational and communication skills
- Excellent written and spoken English.

## What Do We Offer?

- An internship in a growing company with Staff located in Belgium, Germany and the Netherlands
- Under certain conditions, a monthly lump sum allowance
- A professional, pleasant atmosphere with motivated and passionate Staff, where autonomy and initiatives are encouraged.

## How To Apply?

- Please send your CV and Motivation Letter (both in English) to [jobs@spaceapplications.com](mailto:jobs@spaceapplications.com), along with your internship's start date, to the attention of **Mr. Pierre Letier**.

**Candidates shall be eligible to do an internship in the European Union.**

**We are looking for someone to be available for a 6 months' internship.**

**Space Applications Services NV/SA**  
Leuvensesteenweg 325  
1932 Sint-Stevens-Woluwe  
(Brussels Area)  
Belgium

+32 (0)2 721 54 84  
[info@spaceapplications.com](mailto:info@spaceapplications.com)  
[jobs@spaceapplications.com](mailto:jobs@spaceapplications.com)

[www.spaceapplications.com](http://www.spaceapplications.com)  
[www.icecubesservice.com](http://www.icecubesservice.com)  
[www.aerospaceapplications-na.com](http://www.aerospaceapplications-na.com)