

# Internship in Flight Operations Division

## Internship title: Station keeping analysis for Meteosat Third Generation

The station keeping strategy for Meteosat Third Generation (MTG) is based on regular execution of East-West (EW), North-South (NS) and Reaction Wheels Off-Loading (RWOL) manoeuvres with chemical propulsion. These can be executed as stand-alone or combined with each other. As an example, an effective way of combining EW/NS can be implemented with an attitude bias of the platform, while the current operational approach is to execute separate burns. There are stochastic (e.g. performance factors) but also deterministic effects during manoeuvres (e.g. cross couplings evolution in lifetime) that impact the station keeping.

The intern will work aside the Flight Dynamics team for GEO satellites, to run sensitivity analyses for the various station keeping strategies and operational constraints, using the software tools available in-house at EUMETSAT, or (eventually) innovative algorithms. The objective is to identify an optimised station-keeping solution, for various MTG colocation schemes with/without other satellites, and to improve robustness to contingencies, like instruments interference, safe mode or collision avoidance.

## Duties

As an intern you will:

- Run sensitivity analyses for the various station keeping strategies and operational constraints, using the software tools available in-house at EUMETSAT, or (eventually) innovative algorithms;
- Identify an optimised station-keeping solution, for various MTG colocation schemes with/without other satellites;
- Improve robustness to contingencies, like instruments interference, safe mode or collision avoidance.
- In addition, the intern will support relevant day-to-day activities within the team.



### LOCATION

Darmstadt, Germany



### QUALIFICATIONS

The internships are open to bachelor and master students with mandatory internship requirements in relevant disciplines such as Aerospace Engineering.



### LANGUAGES

The official languages of EUMETSAT are English and French. It is necessary to be able to work effectively in English.



### DEADLINE

20 November 2023

## Skills and Experience

- Have the ability to work effectively in English;
- Be computer literate;
- Be intrinsically motivated and curious about the internship subject;
- Be able to work independently and collaboratively;
- Have the ability to take the initiative in researching ideas;
- Have the ability to collect, collate, conceptualize and present information clearly.

Additional specific requirements:

- Analytical and problem-solving skills are required.
- Demonstrated academic experience in the field of orbital mechanics, mission analysis, flight dynamics, space system design, or orbit/attitude control principles;
- Knowledge of Unix systems and scripting languages would be an advantage.

## Employment Conditions

Length of internship: **3 months**

Anticipated start date: **First quarter 2024**

The internship will require a non-disclosure agreement and potentially a basic background check for the intern, due to the sensitivity of the provided information.

No salary is paid to interns who are still in studies, however a daily allowance and contribution to travel / accommodation costs may be provided. The conditions will be established taking into account the requirements and policy of the intern's educational institution.

Interns are responsible for providing their own health and accident insurance and for finding their own accommodation in Darmstadt.

**EUMETSAT is committed to providing an equal opportunities work environment for men and women.**

**Please note that only nationals of EUMETSAT Member States may apply. The EUMETSAT Convention requires that Staff shall be recruited on the basis of their qualifications, account being taken of the international character of EUMETSAT.**

## About EUMETSAT

EUMETSAT is Europe's meteorological satellite agency. Its role is to establish and operate meteorological satellites to monitor the weather and climate from space - 24 hours a day, 365 days a year. This information is supplied to the National Meteorological Services of the organisation's Member States in Europe, as well as other users worldwide.

EUMETSAT also operates several Copernicus missions on behalf of the European Union and provide data services to the Copernicus marine and atmospheric services and their users.

As an intergovernmental European Organisation, EUMETSAT has 30 Member States (Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece,

Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.)

