

## MUNICH AEROSPACE – NEW HORIZONS IN AVIATION AND SPACE

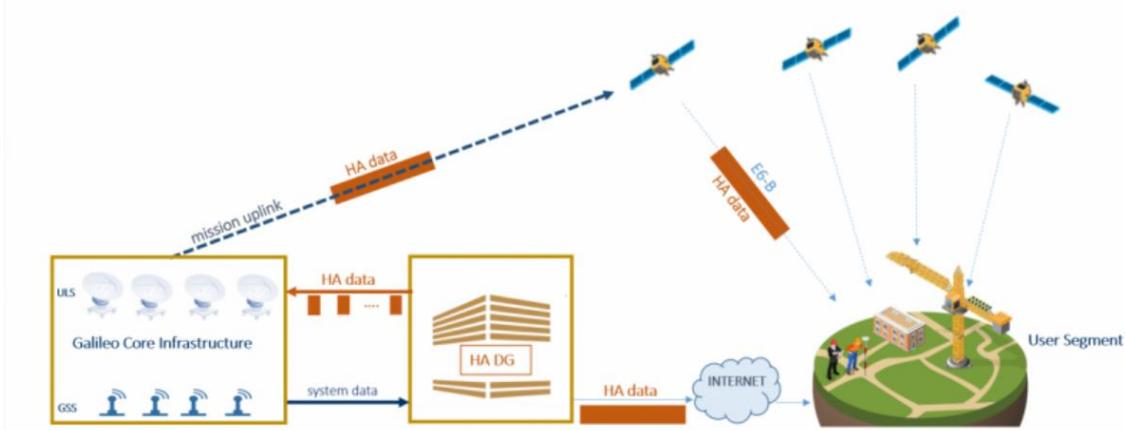
In 2010, through Munich Aerospace and its pooling of research, graduate programmes and teaching, an alliance has been formed between the **Technical University Munich (TUM)**, the **Bundeswehr University Munich (UniBwM)**, the **German Aerospace Center (DLR)**, as well as **Bauhaus Luftfahrt (BHL)**.

To promote excellent, scientific young academics, Munich Aerospace awards a PhD scholarship on

### Galileo High Accuracy Service

Test and analysis for R&D in user-specific application areas

A new service is currently being implemented for the Galileo satellite navigation system. The High Accuracy Service (HAS)<sup>1</sup> will provide decimeter-accuracy based on corrections disseminated through the E6-B signal and through internet, free of charge with rapid convergence, which is very interesting for many applications like autonomous driving/flying, various railway applications, precise farming, etc. To realize the HAS a worldwide network of sensors stations is realized together with an online connection to the GNSS satellites. This is a distinguished feature of Galileo and not available for other GNSS like GPS, GLONASS or BeiDou.



#### Your tasks

- You will receive a full training into Global Navigation Satellite Systems (GNSS) signal processing, message decoding and the complex space infrastructure to realize the HAS to have kick start for your PhD work.
- The major part of your work will focus on the development of optimized user algorithms for the HAS and the assessment of the provided service under different conditions. This includes the implementation of optimized signal decoders and precise point positioning algorithms in a software-based receiver.
- Further, the precision and consistency of HAS corrections shall be compared to alternative precise positioning services based on both absolute and differential GNSS-technologies and the positioning

<sup>1</sup> <https://www.euspa.europa.eu/european-space/galileo/services/galileo-high-accuracy-service-has>

accuracy, availability and convergence time shall be assessed under various and adverse environments and multipath conditions.

#### Your qualifications

- Your skills should include interests in GNSS a master degree in engineering, mathematics or natural sciences (e.g. electrical engineering, geodesy, physics, etc.)
- Also an interest to investigate and analyse the application-specific requirements and relevant regulations (automotive, rail, UAV, etc.) is an important prerequisite.

#### Your academic & industrial supervision and support

The scholarship is part of the Munich Aerospace Research Group "GNSS Receiver Algorithms for Advanced Galileo Services". It is primarily handled by the Professorship for Satellite Geodesy<sup>2</sup> of the Technical University Munich, whose R&D focus includes high-precision GNSS positioning for terrestrial- and space-applications. IABG is involved in various security & safety related GNSS-projects and will provide support and contacts to the relevant application domains and their stakeholders.

#### The Scholarship

The Munich Aerospace scholarship amount is 1.575 € per month granted for a minimum of 12 months and limited to a maximum of 3 years. Munich Aerospace scholarship holders are entitled to attend the Munich Aerospace Graduate School, formed by the TUM Graduate School, the DLR\_Graduate Program and the IABG training program, and have access to special events and trainings. An additional grant of up to € 6.100 per year will be available to cover expenses that are directly related to the PhD project (e.g. textbooks, laptop, conference travels, public transport, housing subsidy). The scholarship holder is part of a Munich Aerospace research group and receives additional technical support from the research group head. The candidates receive their PhD from TUM.

The scholarship can be combined with a part-time employment at IABG. Due to the regulatory-framework for some Galileo-projects an EU-citizenship is desirable.

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#### Interested?

Please send us your application including relevant documents (cover letter, CV, diplomas, transcript of records) in PDF format to [urs.hugentobler@tum.de](mailto:urs.hugentobler@tum.de) or upload the documents to the recruitment portal of IABG (<https://www.iabg.de/karriere/stellenangebote>). The application deadline is November 30, 2021.

**We are looking forward to your application!**

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<sup>2</sup> <https://www.asg.ed.tum.de/iapg/startseite/>