



BA/SA/Group/Lab:

## Advanced Aircraft Positioning

While GPS is great for outdoor localisation, it does not work well indoors because the received signal strength is extremely low. In fact, the GPS signals are 1000 times weaker than the thermal noise! Current indoor alternatives such as WiFi based methods have limited range and thus are only available in neighborhoods with a sufficient number of base stations.



An alternative indoor localization method has been developed in our group. It leverages signals sent by aircraft to localize a user. As aircraft signals can be received hundreds of kilometers away from an aircraft and due to the dense air traffic in more and more countries, this system can be considered to be available in most populated areas. Compared to GPS, the received aircraft signals are much stronger and therefore can be received indoors.

The goal of this project is to improve the accuracy of our prototype system. For instance, the signal processing could be improved to detect more messages per time and the position estimation could be extended with filtering techniques or by incorporating additional knowledge such as the aircraft type.

**Requirements:** Creativity and programming skills are advantageous. The student(s) should be able to work independently on this topic!

**Interested? Please contact us for more details!**

### Contacts

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