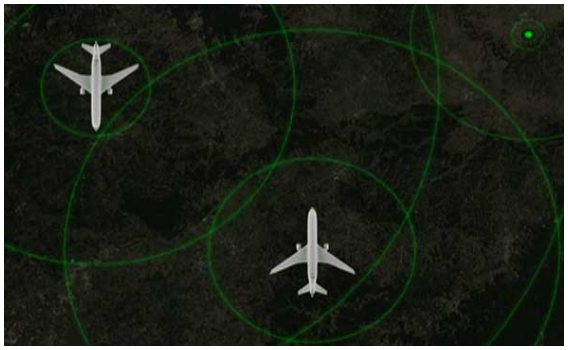
ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Distributed Computing

Prof. R. Wattenhofer

Aircraft Positioning System: Server Setup



While GPS is great for outdoor localization, 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 ground 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.

In our system, a server collects the received messages from fixed ground stations and the mobile users that want to be localized. This leads to a large number of messages that have to be processed and stored.

The goal of this project is to improve the server setup to allow fast processing of the received messages and facilitate scaling up to more receivers. Also new ways to combine the messages from multiple receivers could be investigated.

Requirements: Signal processing and programming skills and creativity 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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