ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Distributed Computing

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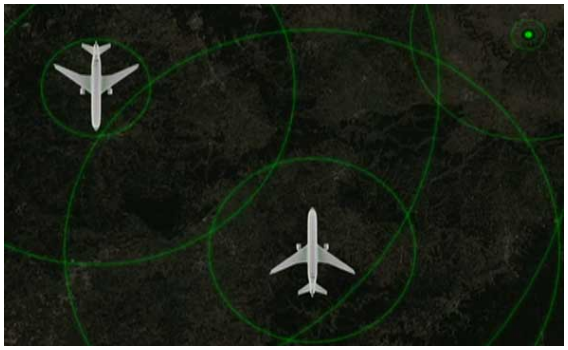
Aircraft Signal Fingerprinting

Aircraft nowadays determine their position using satellite navigation and automatically broadcast it over a protocol called ADS-B. These messages can be received on the ground and by other aircraft and will soon replace secondary surveillance radar. This has several benefits, including higher received signal strength on the ground, increasing for instance the data quality for air traffic control. However, as the messages are not cryptographically signed, messages can also be sent by malicious attackers. This is a threat for air traffic safety.



In this project, we want to explore possibilities for detecting spoofed aircraft messages. We want to achieve this by creating fingerprints of the aircraft signals or of sequences of messages. This allows us to determine whether the messages originate from the aircraft. Additionally, this approach could be combined with other spoofing detection methods.

Requirements: Knowledge of signal processing and machine learning 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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