Aushang bis zum
20.08.2025

Master Thesis

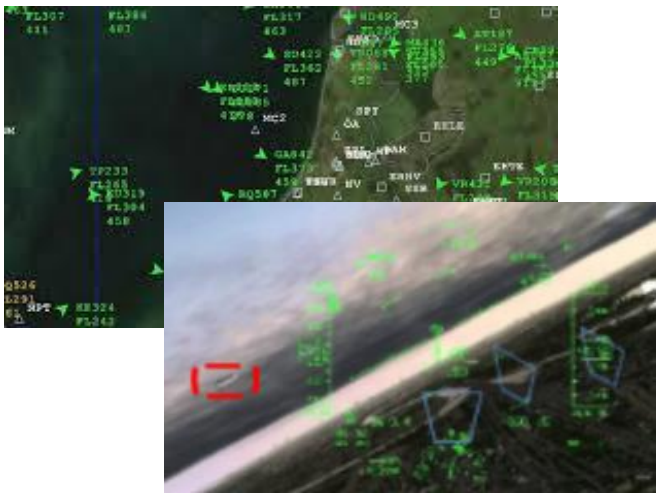
Integration of Air Traffic Simulation into a Flight Simulator with a Focus on Human-Centered Visualization Concepts

Background:

In the context of developing a new flight simulation environment, the integration of realistic and dynamic air traffic is essential to enable credible and operationally relevant scenarios. To support situational awareness and decision-making, this traffic must not only be technically simulated but also presented in a way that is intuitive and cognitively appropriate for human users. Therefore, the design of human-centered visualization concepts plays a critical role. The simulation environment should support various use cases, including training and evaluation, where clear and meaningful traffic displays are required. A modular and adaptable traffic simulation framework will form the technical foundation for this work.

Content of Thesis:

This thesis includes a literature review on traffic simulation and visualization approaches, followed by an analysis of existing open-source simulation tools. Based on defined requirements, a concept for traffic visualization will be developed and implemented. The student will integrate an air traffic simulation into the flight simulation environment and design a corresponding traffic display. The final step includes an evaluation of the solution using suitable methods, as well as comprehensive documentation and presentation of the results.



Organisatorical:

Start date negotiable (available immediately)

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