TECHNISCHE UNIVERSITÄT DARMSTADT
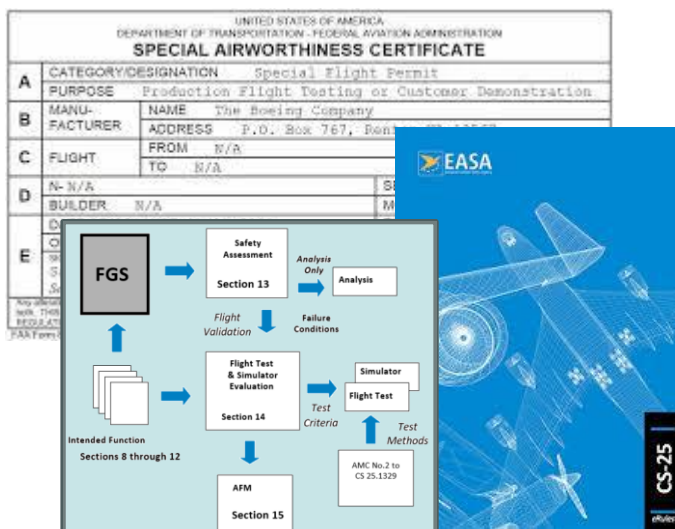
Bachelor/Master Thesis
From Requirements to Compliance: A Methodological Framework for Flight Deck System Certification

Background:

Advances in avionics technology require a reevaluation of existing certification and regulatory requirements. Understanding applicable requirements is critical for ensuring system compliance, safety, and operational approval. However, the complexity and fragmentation of existing standards present major challenges during development. To support future systems, a structured approach to analyzing and mapping relevant regulations is needed.

Content of Thesis:

This thesis investigates how existing certification standards and regulatory requirements apply to modern and emerging avionics systems. The student will begin with a detailed analysis of current regulations and identify which standards are relevant for specific system types and functionalities. Based on this, a structured workflow will be developed to help systematically determine applicable requirements, detect regulatory gaps, and evaluate where updates may be needed. The approach will be tested using a Head-Up Display as a case study. The final result should be a transferable framework that supports system developers in aligning new technologies with evolving certification landscapes.

Organisatorical:

Start date negotiable (available immediately)

Contact:

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