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PhD: Scheduling maintenance tasks for aircraft using component prognostics

Specifications

The PhD project will be conducted within the Air Transport and Operations section of Aerospace Engineering Faculty, Technical University of Delft (TUD).
Duration: 4 years

PhD Description

In recent years, aircraft maintenance is increasingly making use of available data on the condition of components and systems to schedule maintenance tasks. The goal of this PhD project is to develop optimal maintenance schedules that use prognostics about the condition of aircraft components to determine when and which components should undergo maintenance. The availability of spare components should also be taken into account. The scope of this PhD project is scheduling of component maintenance at the fleet level, for a low to medium planning horizon. The PhD candidate is expected to develop optimization models that take into account prognostics on the remaining useful life of components such that the aircraft downtime and/or maintenance costs are minimized. The PhD candidate will also contribute to the development of prognostics algorithms for the remaining useful life of components. The models developed are to be validated in case studies.

Requirements

The successful candidate has:
• A Master of Science degree in operations research, applied mathematics, computer science.
• Knowledge of optimisation techniques.
• Knowledge of machine learning techniques is a plus.
• Strong mathematical, analytical and programming skills.
• Excellent communication skills in spoken and written English, and teamwork skills.
• Creativity, positive attitude, and perseverance.

Applications

To apply, please e-mail a detailed CV, MSc transcripts and a letter of motivation to dr. M.A.Mitici, email m.a.mitici@tudelft.nl. When applying, please refer to vacancy LR19-19.