Munich Aerospace Open PhD Position

**Operational Modelling, Simulation and Optimization of Intermodal Nodes in Air Transport: Simulation and Assessment of Airport-Aircraft Interfaces**

**Context:** Satisfying air transport demand efficiently and realizing seamless intermodal travel and transport chains are among the major challenges for future air transport development. In order to meet future capacity and quality requirements, the focus topic „Aviation Management“ within Munich Aerospace aims at the development of new innovative concepts for airports as intermodal nodes. To support future decisions on new airport concepts and processes, an interdisciplinary research team is set up with the objective to develop integrated assessment capabilities in this field. Scenario and trend analyses are employed to define sound strategic requirements for the air transport system, while simulation models of passenger, cargo and (air-) traffic flow are applied and linked to address all relevant system interdependencies.

**Ph.D. topic:** The proposed PhD project establishes an environment for evaluating all relevant airport-aircraft interfaces. Air transport scenarios developed within Munich Aerospace as well as currently investigated future aircraft concepts define the interface requirements and form the basis for evaluation. The assessment capabilities developed in the project shall in turn support the definition of requirements towards future aircraft developments in order to optimize future airport-aircraft interoperability. The project focuses on analyzing all airport components and processes including all relevant interdependencies with interfacing system elements. Increasingly important aspects of intermodality are subject to evaluation as well. The approach includes simulation based modeling of relevant airport system components and processes. Existing simulation models may be used and enhanced to achieve the required evaluation capabilities. Exchange with professionals of different stakeholders within the air transport system, as well as the relevant research community is encouraged to ensure that all relevant operational aspects are sufficiently addressed and the results are directly related to ongoing research in this field.

The project will be pursued in cooperation between Technische Universität München (TUM), Universität der Bundeswehr (UniBw) and Bauhaus Luftfahrt (BHL). The scholarship is located at the Lehrstuhl für Luftfahrtsysteme (LLS), Technische Universität München (TUM) in Garching.

**Profile:** Candidates should hold a diploma or master degree in aerospace or traffic engineering preferably with a focus on air traffic and aircraft operation. A proactive and independent way of working, team spirit and willingness to interdisciplinary cooperation are required.

The Munich Aerospace scholarship is generally awarded for a **four-year period**. The monthly scholarship is **1,575 €** (taxfree under § 3 Nr. 44 EStG) based on the Munich Aerospace policy. The holder of the position is entitled to participate in training and courses at **Munich Aerospace Graduate School**. Additional funding for conferences and publications can be granted.

Interested candidates should submit a full curriculum vitae, covering letter together with academic records to the email address given below.

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