TOP TEN

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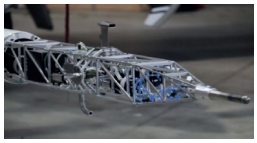
Category: **Airborne** Country: **Germany**

Research Area 2: **Sustainable Mobility of People & Goods** Idea Number: **04**

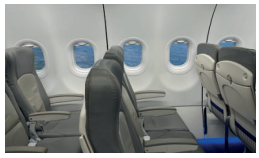
Integrating Fixed Flight-Path Angle Approaches in the European air transport operation

Aircraft descents are frequently interrupted, especially in complex airspaces and with high traffic volumes. In these cases, the affected aircraft performs several horizontal flight phases at altitudes lower than the cruising altitude. Due to the higher pressure at lower altitudes and the associated increased drag, these horizontal flight phases are less efficient than cruise altitude flight. To counteract this, so-called Continuous Descent Approaches (CDA) were introduced. This procedure is also known as Continuous Descent Operation (CDO). During such an approach, the aircraft performs a continuous idle descent without horizontal flight phases. However, the disadvantages of this method are that it is difficult to predict and very susceptible to wind. This is the reason that CDO is used typically at off-peak times. In research, the fixed-flight path angle approach (FPA) has been discussed for several years. This is also a continuous descent, but with a fixed geometric angle. The engines do not idle and the angle is typically flatter than in CDO. Research to date has examined individual trajectories and demonstrated that current generations of aircraft are capable of flying FPAs. The next step is a review of the concept, taking into account the traffic situation and the airspace structure. Central Europe in particular is interesting for consideration due to the complex airspaces. This work aims to evaluate whether FPA can be integrated into European airspace to reduce emissions.

Drag Probe HELIPOD



Research Aircraft Cessna F406 „D-ILAB“ and Nose Boom



Research Simulators DA42 and CETRAS