

3. COIN-Ausschreibung „Kooperation und Netzwerke“



Projekt:

Mini-MASS - Minimized weight, Magnesium-intensive Aircraft Seat Structures

Förderungsnehmer:

LKR Leichtmetallkompetenzzentrum Ranshofen GmbH

Kurzfassung

The greening of aircraft is in the focus of European research activities. One main factor to increase environmental friendliness of aircrafts is mainly the reduction of their weight. Weight reduced seats can be used in every airliner type independently of the latest developments in aircraft technology and offer therefore a simple weight saving solution for many airlines.

This Mini-MASS proposal aims at light weight seat structures of the standard economy class seat of airlines, allowing a weight saving of appr. 350 kg per standard medium range single aisle (A320-like) aircraft, by designing with safe and modern magnesium alloys to a high extent.

Magnesium alloys offer a specific weight of about 1.75 g/cm³ which is one third less than aluminium alloys with 2.75 g/cm³, which it is intended to substitute.

The main technological barriers to be cleared are:

- Maintaining an equivalent level of safety compared to today's products regarding the flammability issue
- Securing a long-lasting corrosion and wear protection for the optimized magnesium components
- Reducing the weight of the seat structure in a way that the increase of manufacturing costs is more than levelled by the fuel saving potential by the reduced weight

The final result of this project is the knowledge and experience to design economy or business class aircraft seats in an intelligent, modern and cost effective way using the lightest possible material in every single part.