The main objective of the BAANG project is to stimulate the scientific excellence and innovation capacity of the involved partners in the field of smart aviation with a positive impact on the environment.

Prof. Michal Kotoul
Project Coordinator

Our motivation

Aviation is one of the major economic and social engines of global development. Despite the significant benefits, aviation faces several challenges, including environmental pollution. There are many ways to reduce this pollution. We believe the smart aircraft wings is one of them.

Contact

www.baang.eu

info@baang.eu

+420 541 144 987

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BAANG

Building Actions in Smart Aviation with Environmental Gains

SMART AIRCRAFT WINGS

What can we learn from birds?

When we observe the flight of the masters, the birds, we notice their natural ability to work with aerodynamics by changing the shape of their wings. The purpose of this ability is, of course, to minimize the effort required to fly. Another inspiration that birds offer is their optimised internal skeletal structure, which results in the light weight structure of their bodies. Nature is full of good ideas!

Our goal

To fully exploit the bird inspiration, we must be able to optimally adapt the wing shape to the crucial flight conditions. Such a wing can be adjusted to various combinations of weight and flight altitude; the second possibility for improvement is the decrease in the demands for structural strength and stiffness, leading to a lower structural weight. That´s why the project focuses on the optimal adaptation of the aerodynamic shape of the wing to actual flight conditions.

Our team is located across Europe

BRNO UNIVERSITY OF TECHNOLOGY
FACULTY OF MECHANICAL ENGINEERING

TU Delft

TU WIEN
TECHNISCHE UNIVERSITÄT WIEN
Vienna | Austria

Imperial College London

Multidisciplinarity is the key

BAANG creates the scientific strategy that connects four disciplines:

- Aeronautics
- Mechatronics
- Mechanics of materials
- Additive technologies

The collaboration runs in five areas:

- Smart materials
- Novel structures
- New design
- Simulation techniques
- Optimal wing shape adaptation