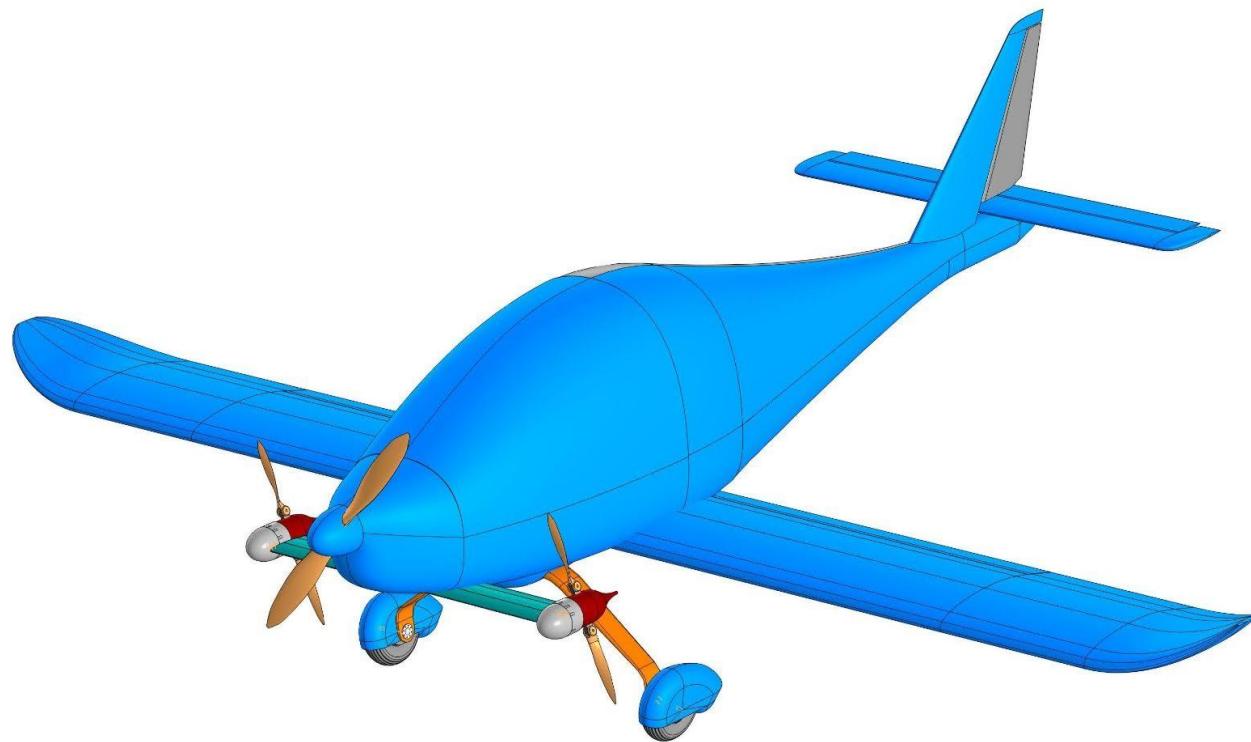


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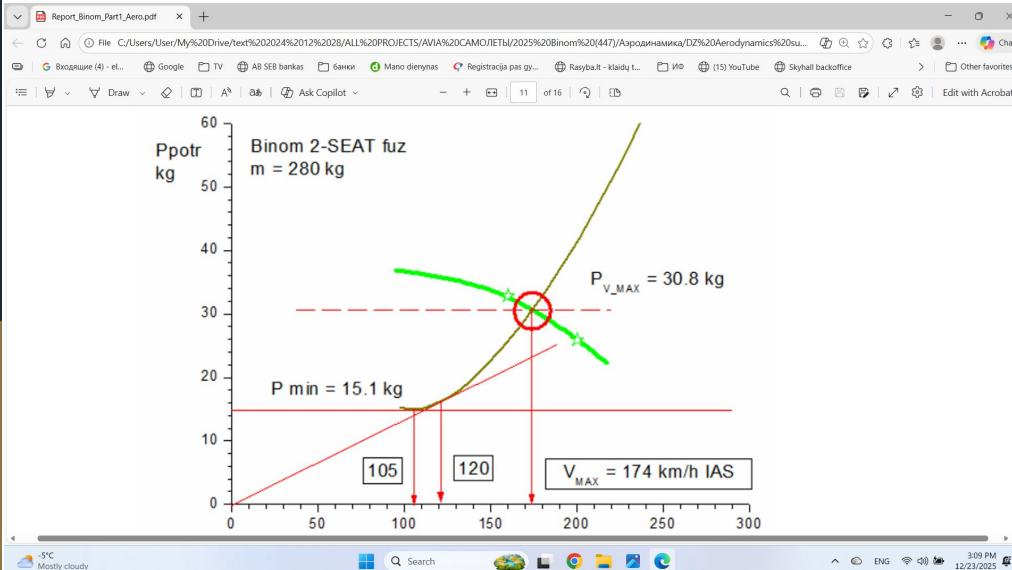
New innovative hybrid ultralight aircraft for 3D urban mobility

Meet the Binom-1, designed to change the landscape of personal 3D transportation, and become part of the future of air mobility.

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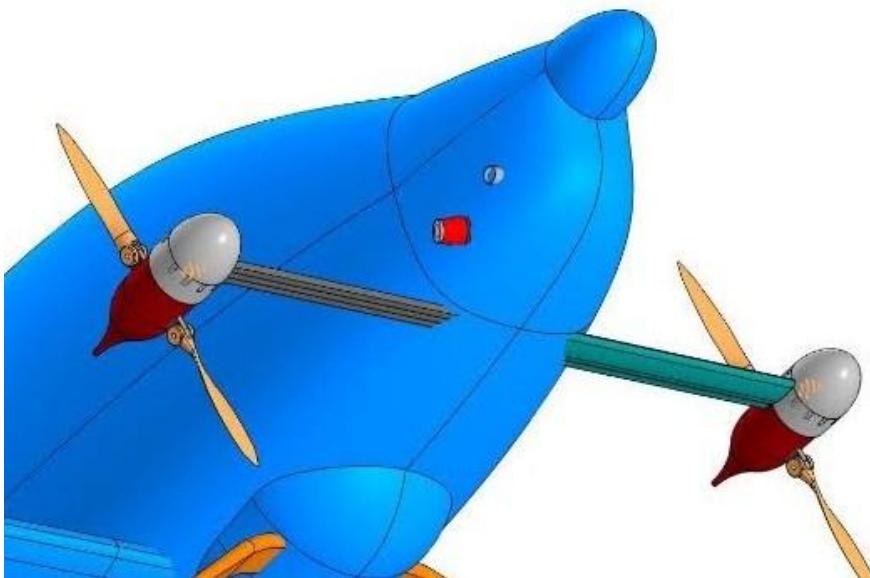
Technical data of the aircraft



Length	5.451 m
Height max	1.71 m
Wing square	6.14 sq m
Wing span	7.5 m
MTOW	280 kg
V stall (flaps 35, AES-on, 280 kg)	45 km/h
V cruise	118 km/h
V max (90% trust)	174 km/h
V max permitted	275 km/h
Flight time	5 hours
Range	590 km
Fuel consumption	7 l/h
Fuel tank	35 litres

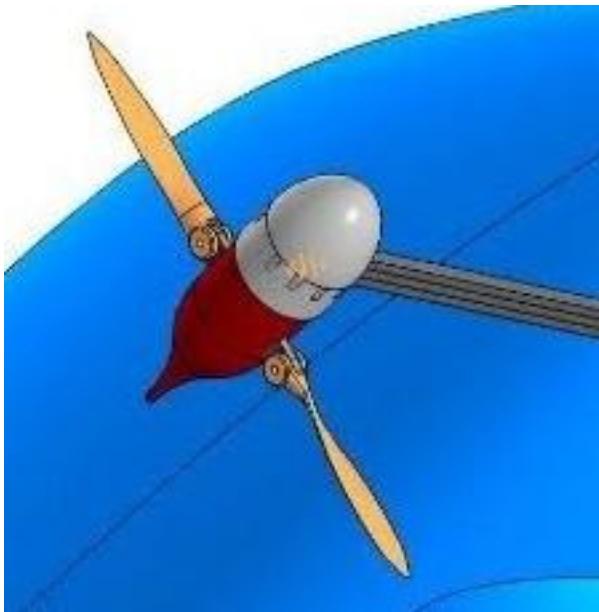
Binom - 1, general fitches, additional wing:

The classic design with an additional small wing in front allows for:



- * a wider range of acceptable aircraft center of gravity
- * placement of two electric motors, ensuring maximum lift coefficient gain from the blower
- * use of the additional wing structure as a resonator and exhaust gas ejector, thereby increasing its efficiency and using some of the exhaust gas energy to generate lift

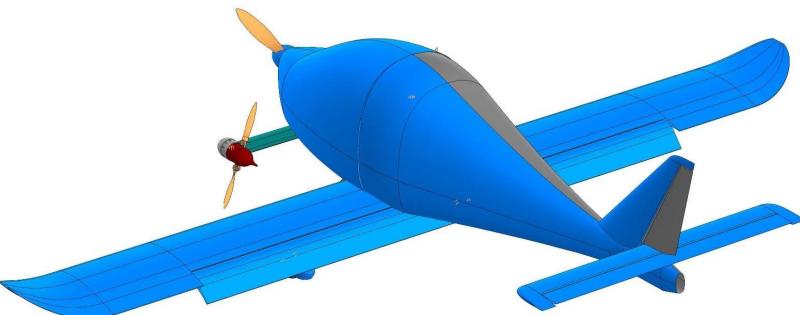
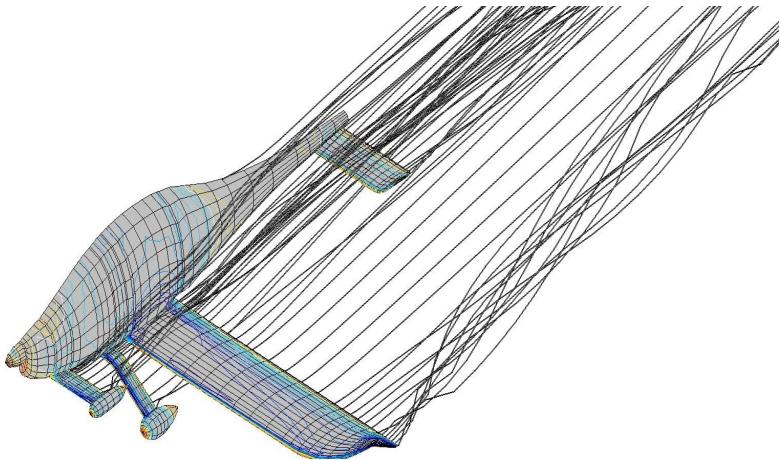
Binom - 1, general fitches, electric power system:



The use of an additional electric power plant with folding propellers increases the aircraft's lift coefficient to 4.5, which in turn enables takeoff and landing at distances of 40-60 meters at very low speeds (stall speed is 45 km/h in landing configuration). This makes the most challenging phases of flight significantly safer, while significantly reducing runway length requirements and, in fact, making flights even within urban areas possible.

The additional power plant is powered by batteries with a rated runtime of 5 minutes (1 minute for takeoff, 2 minutes for landing, 2 minutes for backup). After the electric motors are turned off, the electric motor propellers fold in flight and do not interfere with flight using the main engine. However, the battery backup significantly increases safety, as there is effectively an alternative power plant on board, allowing for takeoff and landing in the event of emergencies or errors in landing calculations under failure conditions. cruise engine.

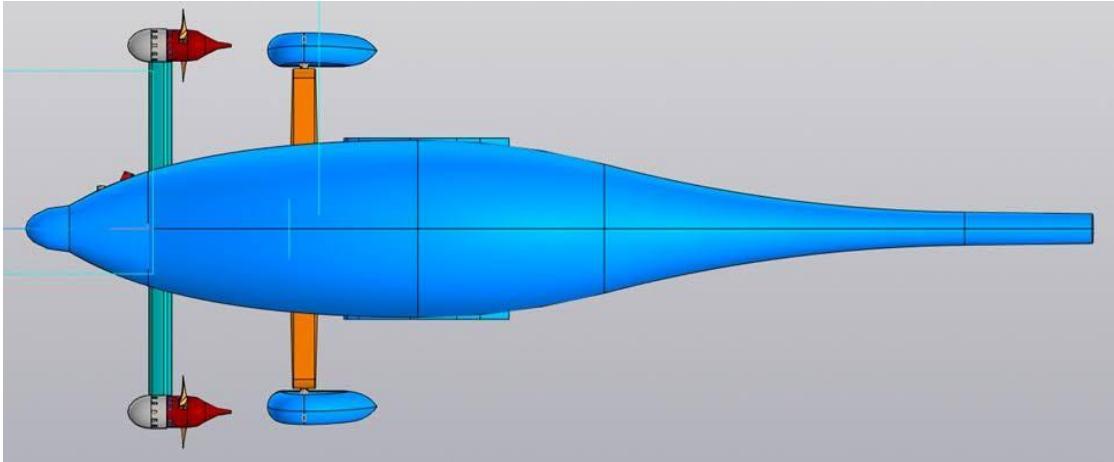
Binom 1: unicel aerodynamics solution:



The aircraft, with its classic layout, simplicity, and ease of control, boasts refined aerodynamics. Along with a carefully selected airfoil, it incorporates a deflecting flap with a profiled slot. Furthermore, the flap is a single aerodynamic surface (uninterrupted under the fuselage), increasing its efficiency and reliability.

To implement an extremely short approach, the aircraft is equipped with brake flaps. This allows for a steep glide approach, under intense airflow on the main wing, with the flaps extended at speeds close to minimum, without slipping.

Binom 1: unical aerodynamics solution:



The aircraft's layout and sophisticated aerodynamics allow for a cabin width of 1,100 mm at its widest point, sufficient for a two-seat configuration.

At the same time, the contours are designed so that the drag coefficient is virtually identical to that of a fuselage with a maximum cabin width of 800 mm, typical for a single-seat cabin.

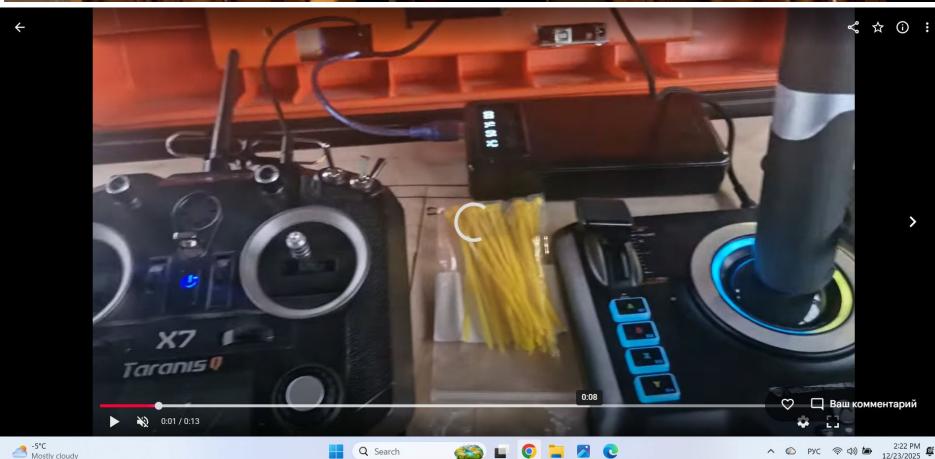
Binom - 1 dual using



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The Binom can be produced in a UAV version as a multi-purpose UAV with a payload of 100 kg, a flight duration of 4-6 hours and a range of 750 km.

Binom - 1



Both the unmanned and manned versions of the aircraft can be controlled remotely by a ground pilot using a ground station and onboard equipment. This solution will significantly facilitate pilot training.

Furthermore, the AI agent we are developing will not only allow for the autopilot to be used, but also relieve the pilot of the tasks of approach calculations, flare, and touch down, which are undoubtedly the most difficult tasks for non-professional pilots.

Furthermore, this system will enable horizontal interaction between aircraft to automate the management of heavy traffic in unregulated airspace. The goal is to use our aircraft as a real vehicle for 3D mobility.

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Create, develop and prototyping by UAB “Budivnika”



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