GRUG GROUP

FUTURE TECHNOLOGIES

BUSINESS BROCHURE &

SBX AIRCRAFT PROJECT INFORMATION

The future is our present

ABOUT OUR COMPANY

GRUG GROUP LLC, since 2017, is an aerospace company, dedicated to the design and development of manned and unmanned innovate aircraft, with state-of-the-art technology and alternative propulsion systems, providing the next generation of aircraft that will cross the skies in the new era of aviation.

OUR MISSION

We seek to change the way we move intracity and intercity, ensuring the saftey of its passengers wether for personal ownership transportation on-demand air taxi, air bus, special operations, etc.

OUR VISION

Turn into a high-tech aircraft manufacturer to lead the aircraft world market.

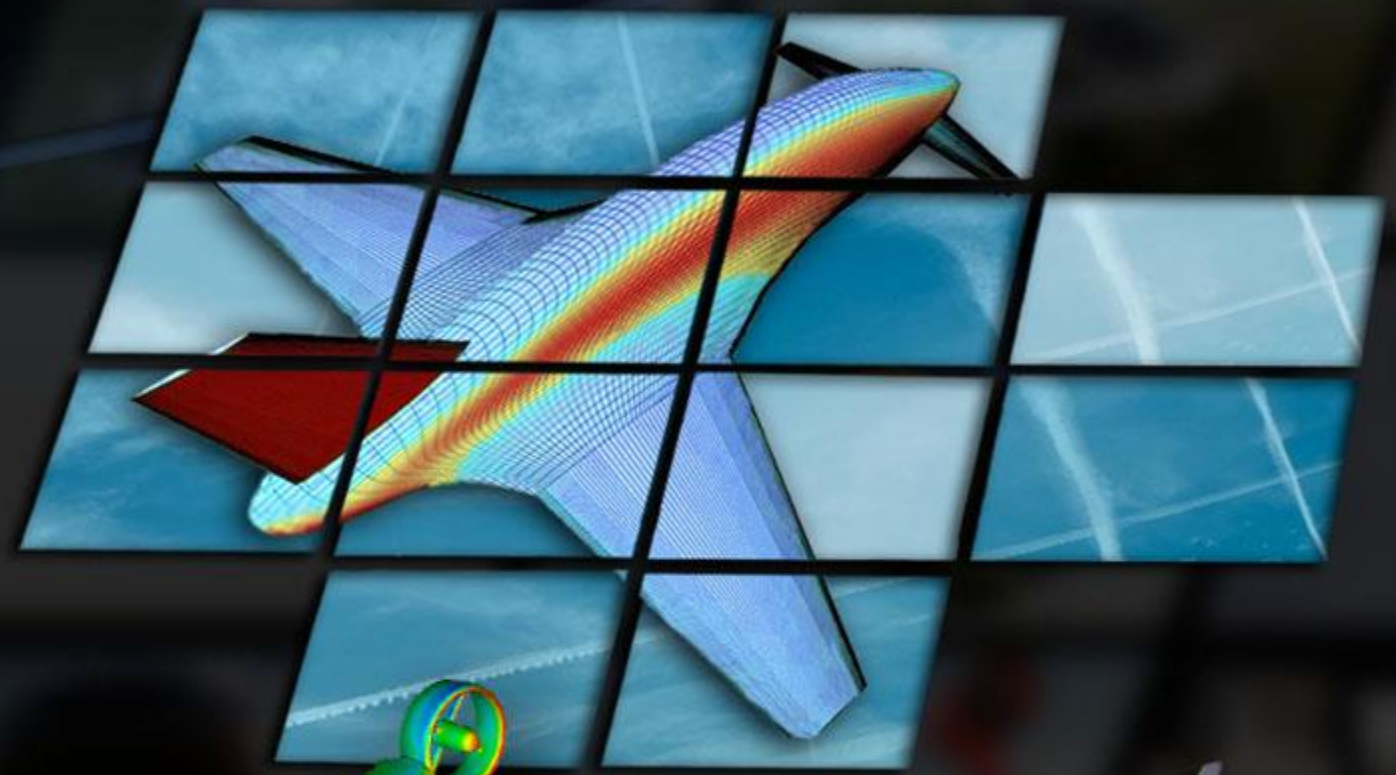
OUR VALUES

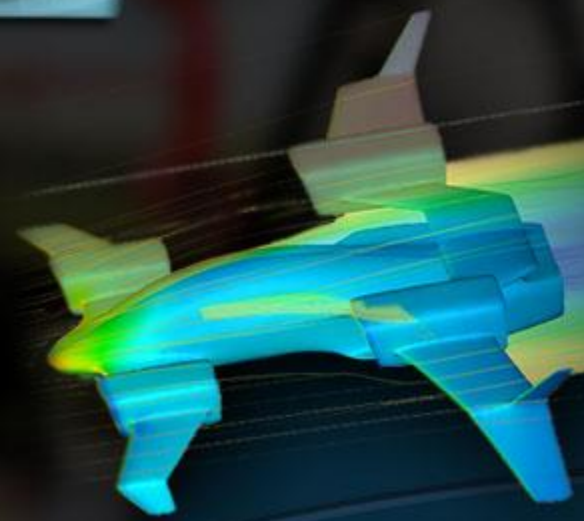
Since our beginnings we have been characterized by perseverance, development and being visionary and innovative.

SAFETY IS OUR HIGHEST PRIORITY

All our aircraft are designed, with strong quality materials, redudant reliable systems. Multi-safety devices and computer-aided navigation, reducing operationals risks.

The evolution of technology and development in aviation industry, allows to considerably improve aircraft safety, the concept of safety has been changed, allowing that trough sophisticated simulations and tests during the development phase of an aircraft and sensors, problems can bee detected, wich can be corrected before it becomes an unsafe critical situation.





AIRCRAFT NEXT
GENERATION PROGRAM

At **GRUG GROUP LLC,** we are designing manned and unmanned aircraft of radical airframe designs, with new forms of propulsion (such as electric, hybrid and others), full glass cockpit avionics and computer-aided navigation, with high quality and safety standards.

All aircraft are fully customizable, and equipable in many ways to meet with multiple task including cargo, aerial photography, survillance, package delivery, military, law eforcement and other duties.

ABOUT US

URUPAGUA URQUIOLA

LAWYER
President
Co-Founder

With more than 20 years of experience in directing legal deparments of public and private institutions, also in management, she specializes in forming effective work teams, auditing internal processes, can quickly detect and identify processes that need to be redefined or adjusted to guarantee the optimal operation of a company.

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NELSON SALAS

AERONAUTICAL ENGINEER
Chief Executive Officer
Co-Founder

With more than 20 years of experience in the aviation sector, managed aeronautical maintenance organizations and air transport divisions, he is very skilled in the formation and organization of effective work teams and the creation of efficient processes, is dedicated to the design and development of high-end aeronautical projects with a futuristic vision.

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SBX

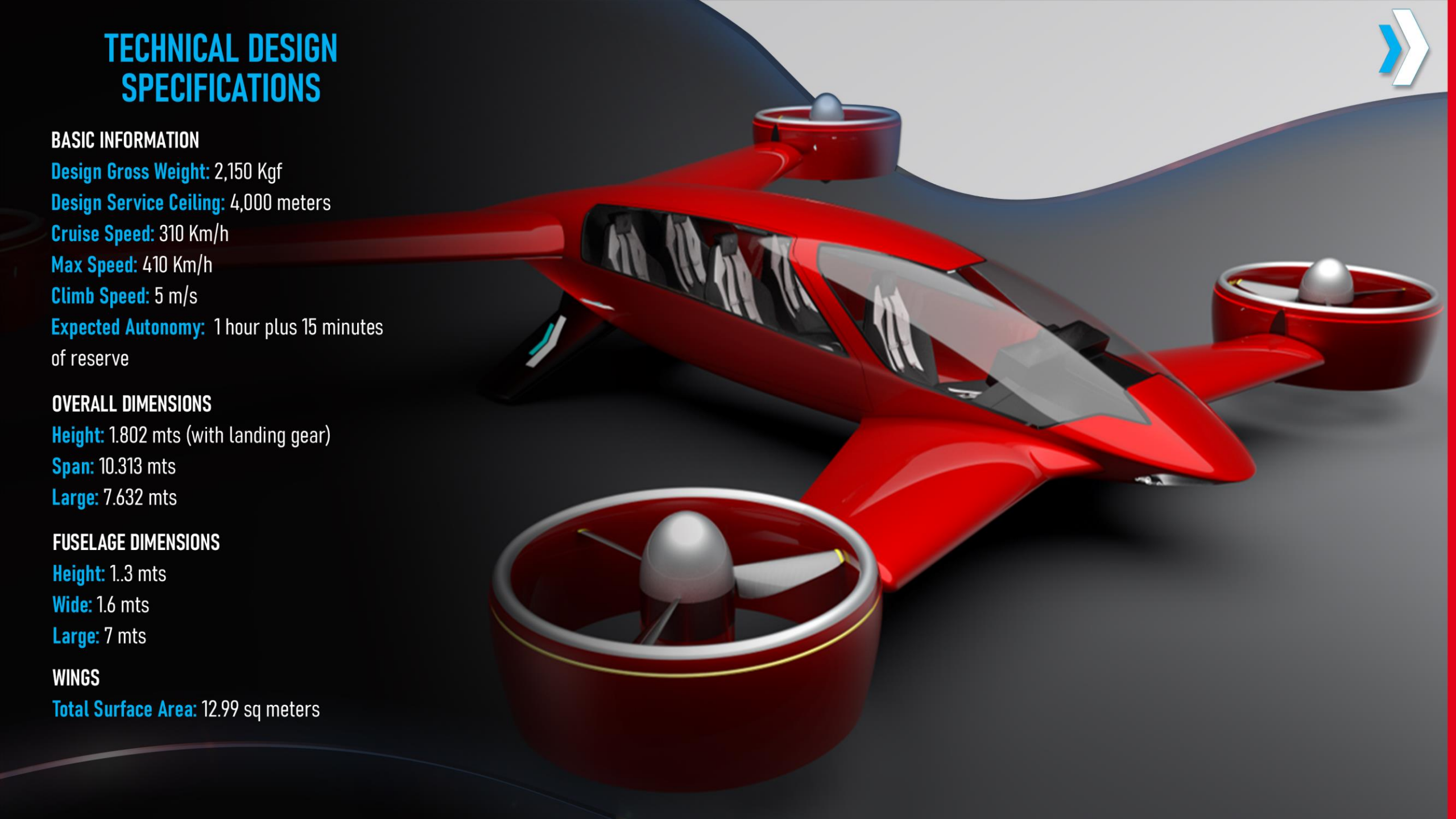
AIRCRAFT PROJECT

Under the AIRCRAFT NEXT GENERATION PROGRAM, we are developing the **SBX,** taht is a five (05) seats full electric aircraft with VTOL capabilities, powered by four (04) tilting Shrouded rotors.

The project born beginning the year 2019 and remaining in the concept design phase until March 2020, since the beginning two concepts have been developed, the first had a capacity for four (04) persons, in the second the capacity was increased to five (05) persons.

Currently, the project is in the preliminary design stage.

TECHNICAL DESIGN SPECIFICATIONS



BASIC INFORMATION

Design Gross Weight: 2,150 Kgf
Design Service Ceiling: 4,000 meters
Cruise Speed: 310 Km/h
Max Speed: 410 Km/h
Climb Speed: 5 m/s
Expected Autonomy: 1 hour plus 15 minutes of reserve

OVERALL DIMENSIONS

Height: 1.802 mts (with landing gear)
Span: 10.313 mts
Large: 7.632 mts

FUSELAGE DIMENSIONS

Height: 1..3 mts
Wide: 1.6 mts
Large: 7 mts

WINGS

Total Surface Area: 12.99 sq meters

DUCTED FAN OVERALL DIMENSIONS

Diameter: 1.593 m
Large: 0.569 m (duct)
Large: 0.95 m (Rotor hub)

PROPELLER

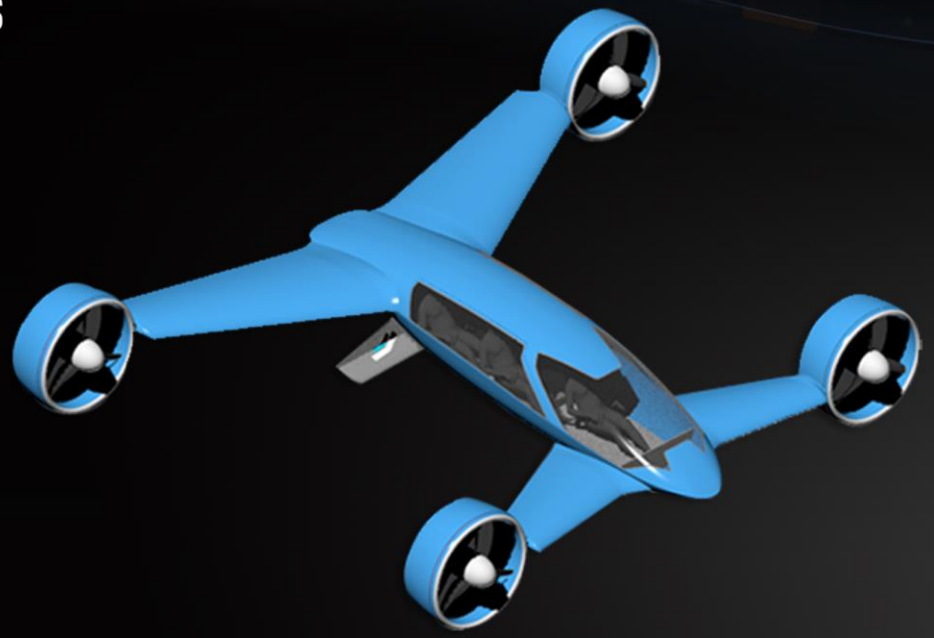
Diameter: 1.359 m
Rotor Hub diameter: 0.39 m
Number of Blades: 3
Type: Variable Pitch Propeller

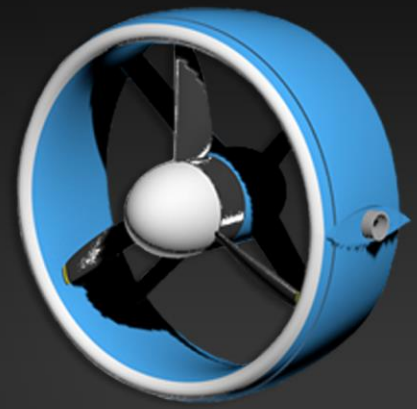
eMotor

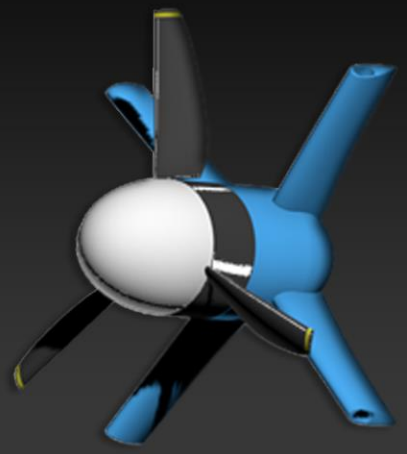
Emrax 268 (Twin Configuration)

Note: The second eMotor will be used for take off & landing in case of failure of the main eMotor.

When is not used will work as Generator for battery in flight recharge purpose.

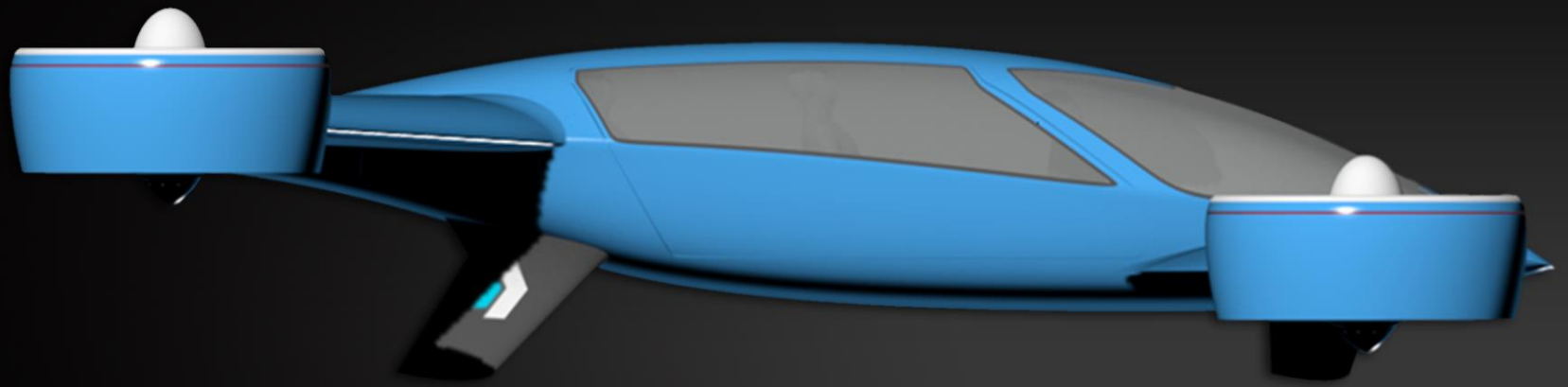


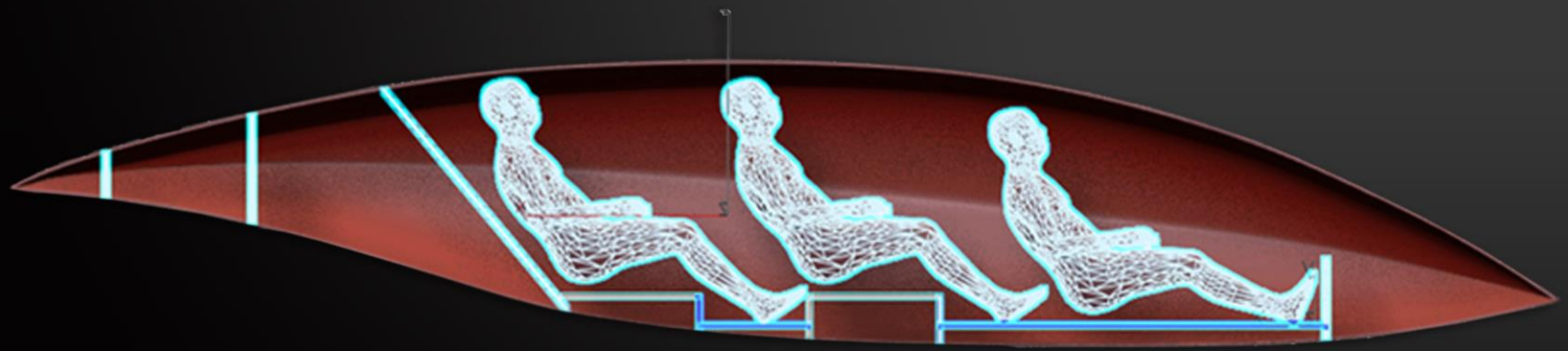




The cabin space was designed to accommodate 05 persons of 1.9 mts maximum height (Comfortably).

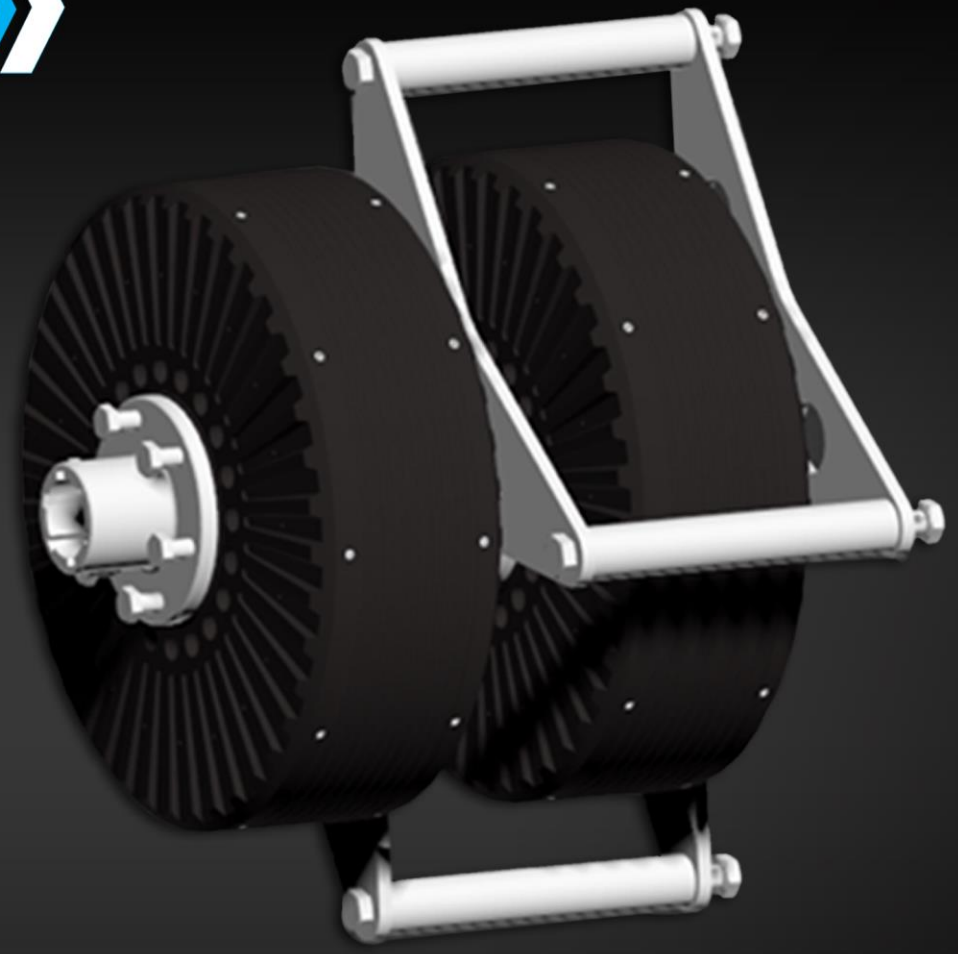
This project is under development with the participation of the following companies as project partners:





Matrix Aviation

STELLAN GROUP

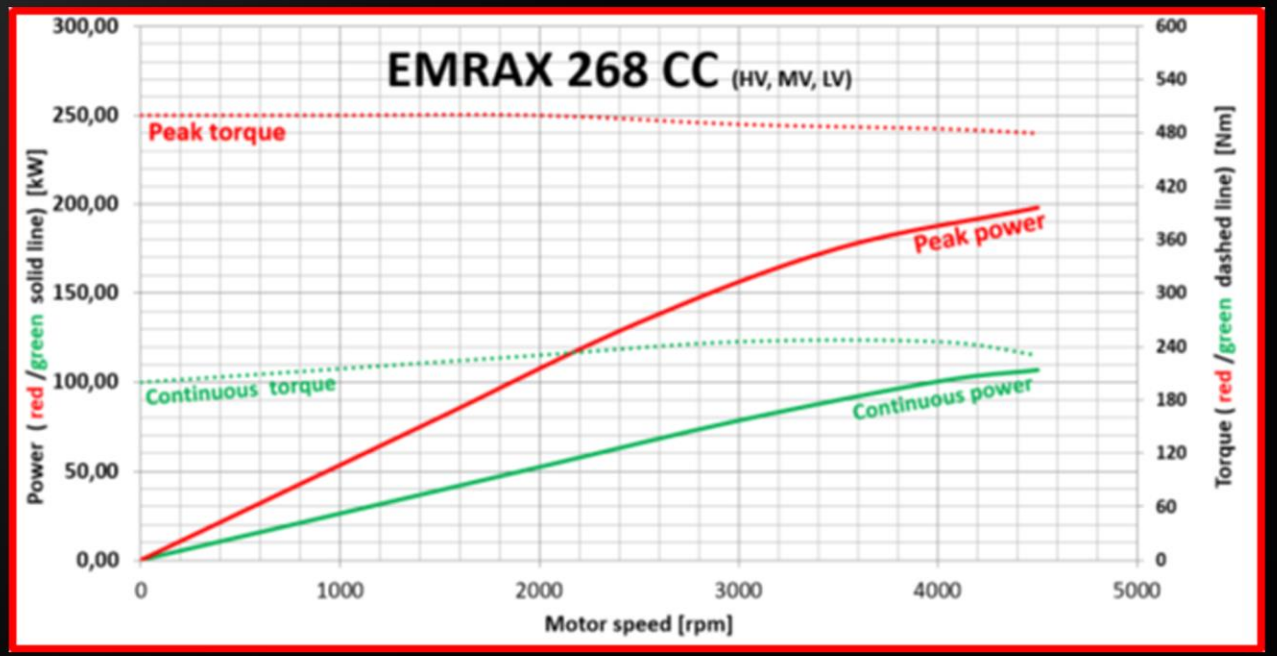


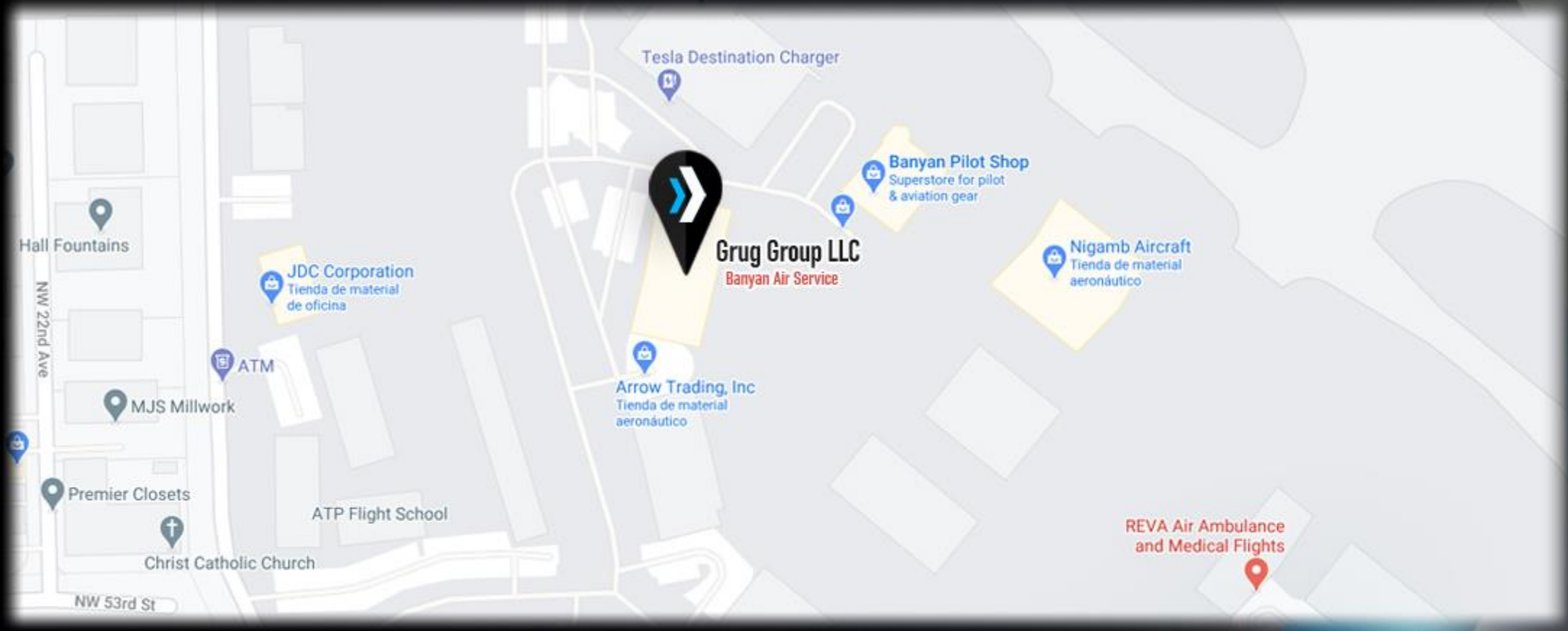
eMOTOR

EMRAX 268 SPECIFICATIONS (EACH eMOTOR)

COMBINED COOLED = AIR + LIQUID COOLED

Maximal battery voltage [Vdc] and max load RPM: 650 Vdc (4500 RPM)
Peak motor power at max load RPM [kW]: 200
Continuous motor power RPM [kW]: 107
Maximal rotation speed [RPM]: 4500 (5500 for a few)
Maximal motor current [Arms]: 400
Continuous motor current [Arms]: 190
Maximal motor torque (for a few seconds) [Nm]: 500
Continuous motor torque [Nm]: 250





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