

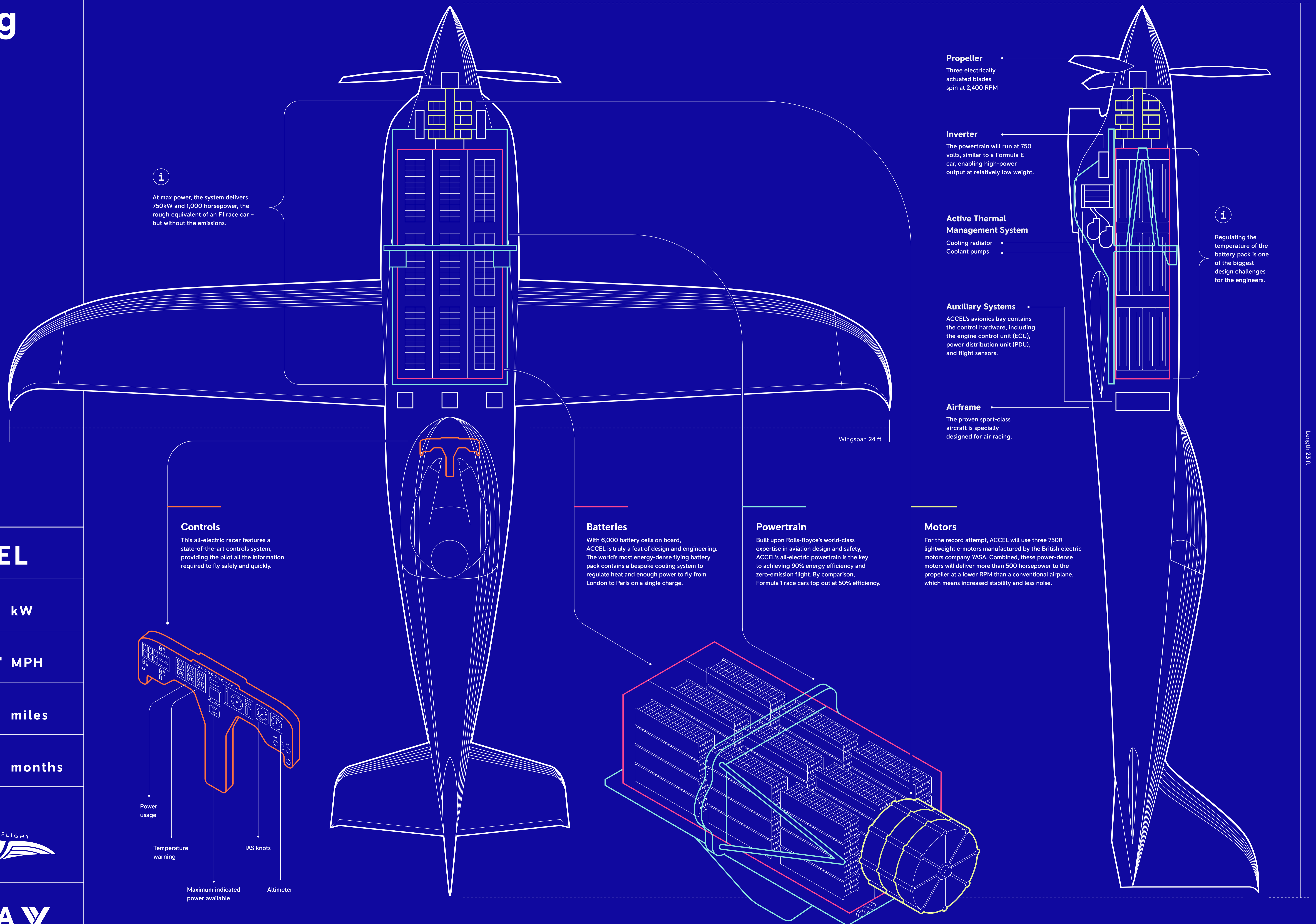
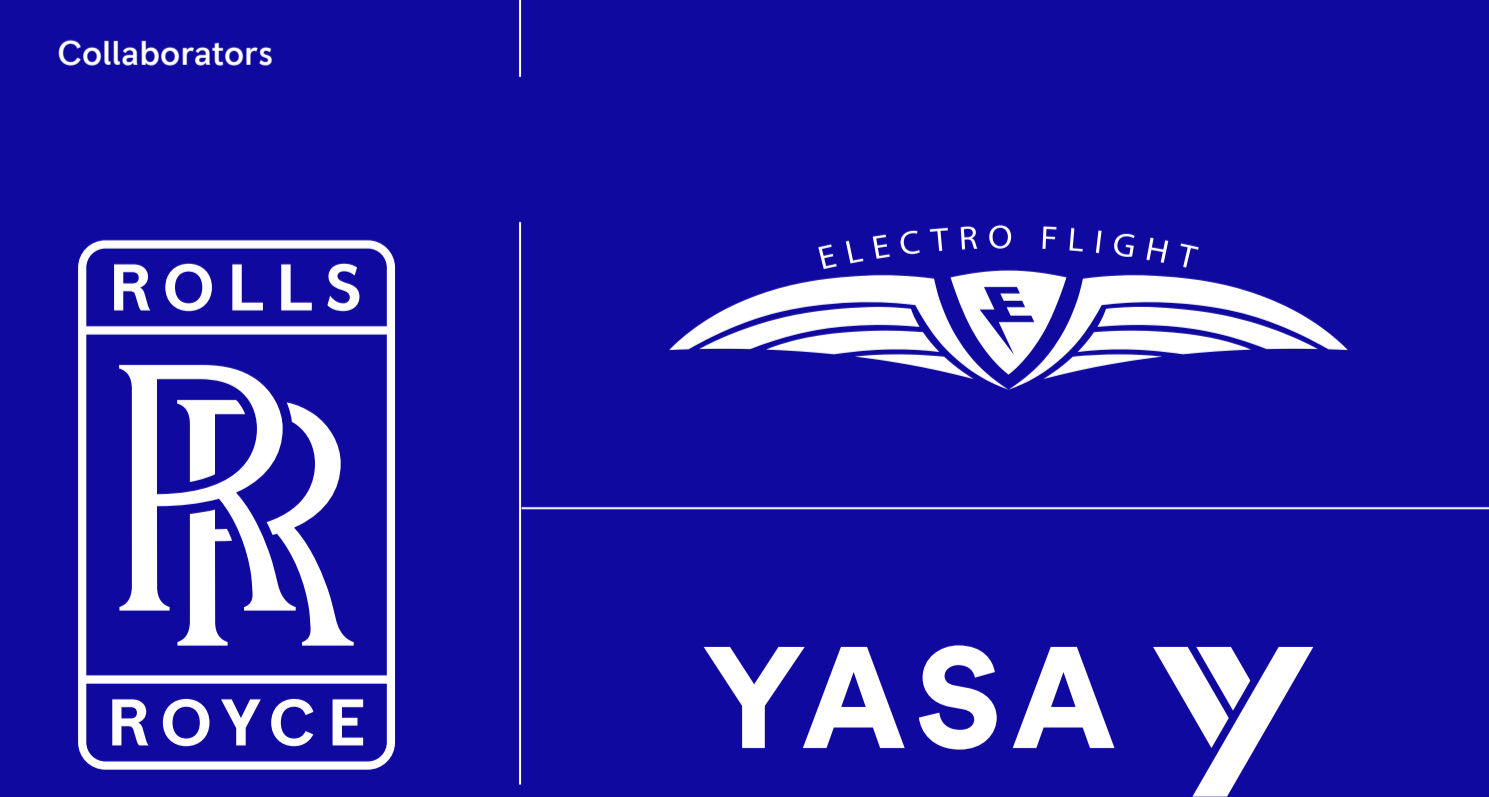
# Electrifying Flight

In 2020, Rolls-Royce will make history when its first fully electric aircraft takes to the skies over Wales. Funded by the UK government, the “Accelerating the Electrification of Flight” project (ACCEL) is an effort to build, test, and commercialise a specially designed aircraft powered entirely by megawatts. Rolls-Royce and its partners, Electroflight and YASA, intend the single-passenger aircraft to break a series of speed, performance, and development records. ACCEL’s overarching mission is to develop the requisite technology and supply chain knowledge to spur development of future aircraft concepts and establish the UK as a global leader in all-electric aviation. Here’s a look at ACCEL’s key features.



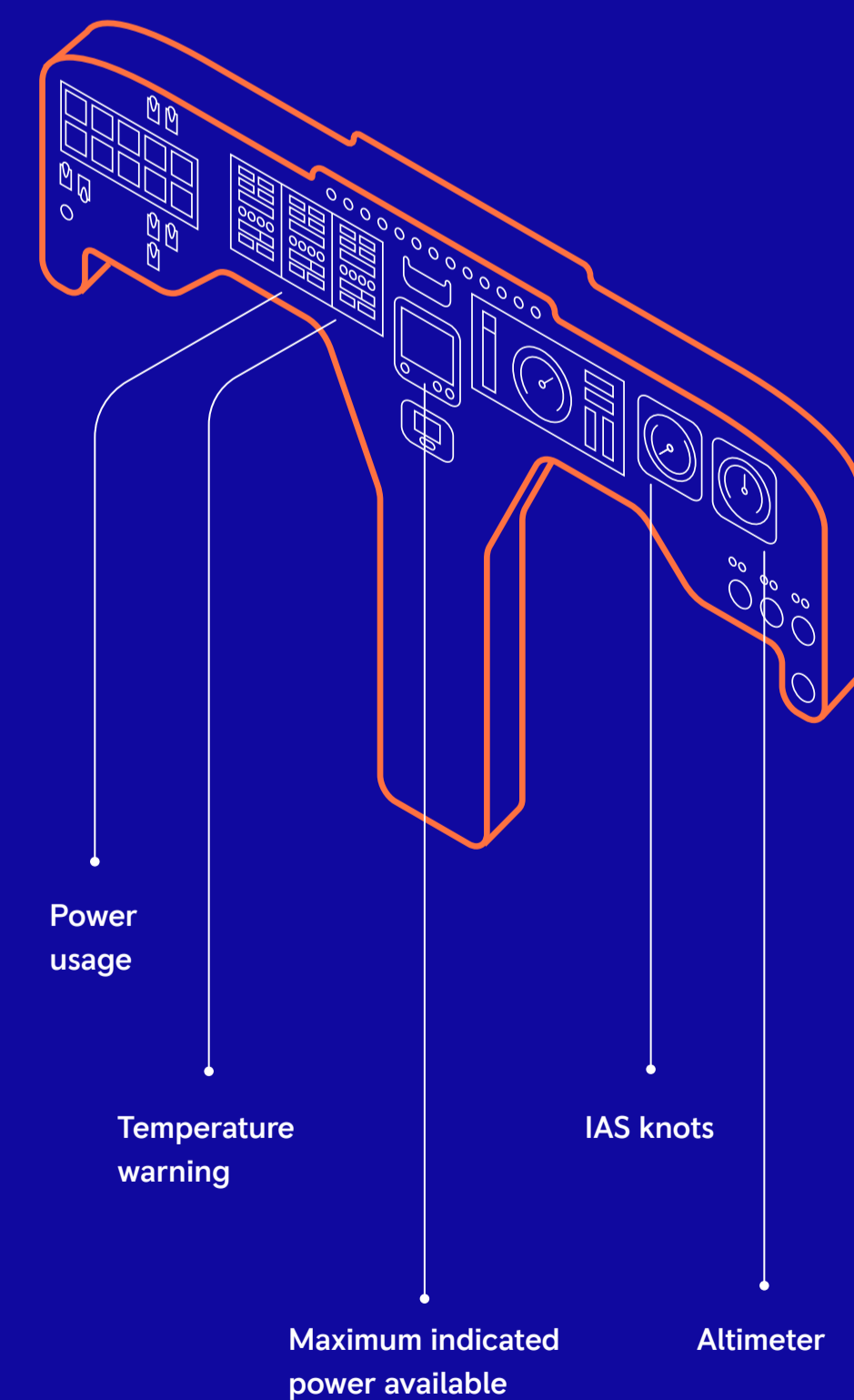
At max power, the system delivers 750kW and 1,000 horsepower, the rough equivalent of an F1 race car – but without the emissions.

Project name	<b>ACCEL</b>
Max power	<b>750 kW</b>
Top speed	<b>300+ MPH</b>
Range	<b>200 miles</b>
Development	<b>24 months</b>



### Controls

This all-electric racer features a state-of-the-art controls system, providing the pilot all the information required to fly safely and quickly.



### Batteries

With 6,000 battery cells on board, ACCEL is truly a feat of design and engineering. The world’s most energy-dense flying battery pack contains a bespoke cooling system to regulate heat and enough power to fly from London to Paris on a single charge.

### Powertrain

Built upon Rolls-Royce’s world-class expertise in aviation design and safety, ACCEL’s all-electric powertrain is the key to achieving 90% energy efficiency and zero-emission flight. By comparison, Formula 1 race cars top out at 50% efficiency.

### Motors

For the record attempt, ACCEL will use three 750R lightweight e-motors manufactured by the British electric motors company YASA. Combined, these power-dense motors will deliver more than 500 horsepower to the propeller at a lower RPM than a conventional airplane, which means increased stability and less noise.

### Propeller

Three electrically actuated blades spin at 2,400 RPM

### Inverter

The powertrain will run at 750 volts, similar to a Formula E car, enabling high-power output at relatively low weight.

### Active Thermal Management System

Cooling radiator  
Coolant pumps

### Auxiliary Systems

ACCEL’s avionics bay contains the control hardware, including the engine control unit (ECU), power distribution unit (PDU), and flight sensors.

### Airframe

The proven sport-class aircraft is specially designed for air racing.



Regulating the temperature of the battery pack is one of the biggest design challenges for the engineers.

Wingspan 24 ft

Length 25 ft