

Battery-powered aircraft e-Genius on cloud nine

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The battery-powered electrical research aircraft e-Genius from the Institute for Aircraft Construction (IFB) at the University of Stuttgart was transported by air from the Kornwestheim/Pattonville airfield on the 560 km route to Straußberg at the beginning of September as a warm up for the Green Speed Cup competition. The e-Genius even set an initial world record on the first transit stop to recharge in Dessau: before this

no battery-powered aircraft had ever achieved the feat of travelling a distance of 393 km. On the very first competition day of the Green Speed Cup, the e-Genius had to up its game once more with a daily task of 405 km. Yet the IFB pilots also successfully mastered this range and set the range record for battery-powered aircraft for a second time on 6th September 2013.

In the course of the competition, the conventionally motorised competitors stood no chance against the Stuttgart energy-saving miracle: with the same cruising speed the E-aircraft consumes only a fifth of the energy compared to conventional two-seaters. The e-Genius is still only a two-seater prototype, yet IFB professor Rudolf Voit-Nitschmann is hopeful that the research results in future can also be used for larger aircraft: "We are able to show with the e-Genius that the electrical drive in the aircraft works reliably, with minimum noise and with excellent [energy efficiency](#). This will be significant for future aircraft, e.g. in feeder traffic that is mainly serviced by turboprop aircraft."

The [electric aircraft](#) e-Genius was designed and constructed under the leadership of Prof. Rudolf Voit-Nitschmann at the Institute for Aircraft Construction. The successful maiden flight was completed in May 2001. At present the e-Genius is the most efficient battery-powered aircraft worldwide, has a [wingspan](#) of 16.85 m, a take-off performance of 65 kW and approx. 900 kg take-off mass. The rechargeable power packs are able to store 56 kWh [electrical energy](#), thereby contributing 300 kg to the take-off mass. The pilots completed the record distance with an average speed of 160 km/h and thereby required an energy equivalent of converted 1 litre for 100 km/h.

Provided by University of Stuttgart

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