

CITYAIRBUS DEMONSTRATOR PASSES MAJOR PROPULSION TESTING MILESTONE

News / Manufacturer

CityAirbus

A multi-passenger, self-piloted electric vertical takeoff and landing (VTOL) demonstrator designed for urban air mobility with cost efficiency, high-volume production and a low environmental footprint in mind.

AUTONOMY

15 minutes

ENGINES

- 8 fixed pitch propellers powered by direct drive engines
- 8 x 100 kW electric motors

SIZE

Compact size for ideal integration into urban landscapes

BATTERIES

- 140 kW power x 4 batteries
- 110 kW energy in all 4 batteries

Ducted high lift propulsion units designed for efficiency, low acoustic footprint and safety

CAPACITY

Transports up to 4 passengers

Avionics and autopilot built for optimised urban air traffic management

CRUISE SPEED

120 km/h

Making CityAirbus a reality

2015



Feasibility study

Study confirms that CityAirbus will meet operating cost targets and safety requirements to be certified for public use

2016



Full scale component testing

Key technologies demonstrated at full size

2017



Flight testing with small scale drone

Control algorithms and flight mechanics developed

2018



Demonstrator team created

Collaborative team of highly dynamic and experienced engineers set up

2018



Full size demonstrator

Full-scale in-flight demonstration and verification of a full electric, RPM-controlled multi-propeller vertical takeoff and landing (VTOL)

2023



CityAirbus takes to the sky

Fully certified CityAirbus becomes part of public urban transport mix, in conjunction with upgraded urban air traffic management

Benefits of adding the third dimension to urban transport networks



1 URBAN DEVELOPMENT

The third dimension increases the geographic accessibility to remote and underserved areas of the city



2 HIGHER SPEED AND RANGE

Self-piloted flying vehicles can operate at three times the speed of the average road vehicle and extend commuters' geographical reach by tenfold



3 ENVIRONMENTAL FOOTPRINT

Self-piloted flying vehicles are fueled by electricity and are energy efficient

AIRBUS

Airbus Helicopters has recently completed the first full-scale testing for the propulsion system of the CityAirbus demonstrator – a multi-passenger, self-piloted electric vertical take-off and landing (VTOL) vehicle designed for urban air mobility. During this successful testing phase, the CityAirbus team thoroughly checked the individual performance of the ducted propellers as well as the integration of the full-scale propulsion unit with two propellers, electric 100 kW Siemens motors and all electrical systems.

CityAirbus is a battery-powered air vehicle able to vertically take off and land. It is designed to carry up to four passengers over congested megacities to important destinations such as airports or train stations in a fast, affordable and environmentally friendly way. The innovative four-ducted propeller configuration significantly contributes to safety and low acoustic footprint.

“We now have a better understanding of the performance of CityAirbus’ innovative electric propulsion system, which we will continue to mature through rigorous testing while beginning the assembly of the full-scale CityAirbus flight demonstrator” says Marius Bebesel, CityAirbus chief engineer.

The full-scale demonstrator will be tested on ground initially. In the first half of the coming year the development team expects to reach the “power on” milestone, meaning that all motors and electric systems will be switched on for the first time. The first flight is scheduled for the end of 2018. In the beginning, the test aircraft will be remotely piloted, later on a test pilot will be on board.

CityAirbus will be designed to carry up to four passengers on fixed routes with a cruising speed of 120 km/h. It will be initially operated by a pilot to ease certification and public acceptance, paving the way to future fully-autonomous operations.

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