

Press release



Source:

https://boschmediaservice.hu/en/press_release/bosch_flying_cars_2019_june_eng-244.html

06/19/2019

ID: 244

Bosch technology teaches cars to fly

Sensor box for air taxis

- Study forecasts 1 billion flights in flying taxis in 2030.
- Bosch sensor box makes it possible to control flying taxis with precision.
- Sensor solution from Bosch offers economic advantages by using production-tested components from the automotive sector.

Stuttgart, Germany – With traffic jams a common occurrence in the world's cities, frustrated drivers sometimes find themselves looking to the heavens for a little help from above. A few years from now, the skies could in fact offer a tangible solution. The Boston Consulting Group predicts that people around the world will take 1 billion flights in air taxis in 2030, once sharing services have also established a presence on fixed routes above the ground. What is more, most of those air taxis will be capable of operating without a pilot. Bosch is working on state-of-the-art sensor technology to make these flights especially safe, comfortable, and convenient. "The first flying taxis are set to take off in major cities starting in 2023, at the latest. Bosch plans to play a leading role in shaping this future market," says Harald Kröger, president of the Bosch Automotive Electronics division. To help it achieve this goal, Bosch has discovered a gap in the market. Conventional aerospace technology is too expensive, bulky, and heavy to be used in autonomous flying taxis. However, modern sensors that are also used for automated driving or in the ESP anti-skid system could have the potential to bridge this gap. That is why a team of engineers has combined dozens of sensors to create a universal control unit for flying taxis.

Bosch technology for flying taxis

Featuring Bosch sensors already in use in production vehicles, the universal control unit is designed to ensure the ability to determine the position of the flying taxis at all times, allowing them to be controlled with precision and safety. The sensor box is equipped with MEMS sensors, which Bosch developed for vehicles over 25 years ago. In vehicles, they supply control units with data about

Robert Bosch Kft.
1103 Budapest,
Gyömrői út 104.
www.bosch.hu/en

Press information:
Dóra Domokos
PR Manager
Bosch Group in Hungary

E-mail: dora.domokos@hu.bosch.com
Phone: +36 20 779 1422
www.boschmediaservice.hu/en

whether the car is currently braking or accelerating, and lets them know the direction in which the vehicle is traveling. The Bosch sensor box for flying taxis is equipped with acceleration sensors that measure the movements of the aircraft. Built-in yaw-rate sensors measure the flying vehicle's angle of attack, while magnetic field sensors gauge its compass heading. The package also includes pressure sensors, which use barometric pressure to measure altitude and dynamic pressure readings to determine the vehicle's current speed.

Unlike current sensor systems in the aerospace sector, some of which cost tens of thousands or even several hundred thousand euros, Bosch can make use of its solution for a fraction of the cost. That is because the company uses production-tested sensors that Bosch has already been developing and manufacturing for the automotive industry for many years. "Through our Bosch solution, we aim to make civil aviation with flying taxis affordable for a wide range of providers," says Marcus Parentis, the head of the technology team at Bosch in charge of the control units behind the electric light aircraft. What is more, the Bosch sensors are especially small and lightweight. Flying taxi manufacturers can easily install the Bosch sensor box into their air vehicles using the plug-and-play principle.

Shared mobility in the air: 1 billion flights in flying taxis in 2030

The market for flights using electric air taxis in cities is set to see substantial growth in the years ahead. Test flights are scheduled to begin in cities such as Dubai, Los Angeles, Dallas, and Singapore in 2020. Experts expect commercial operations to begin in 2023. Although pilots will probably be on board at first, the light aircraft could start flying autonomously over the roofs of major cities as early as 2025, controlled by staff on the ground. By that time, roughly 3,000 flying taxis will be in operation worldwide, according to Roland Berger. That number will increase to 12,000 by 2030, with just under 100,000 flying taxis taking to the skies by 2050. Consultants from Morgan Stanley estimate that the market for flying taxis could even reach 1.35 trillion euros (1.5 trillion USD) by 2040, extending beyond the United States and southeast Asia to include large and medium-sized cities in Germany as well. In regions such as the Ruhr valley, the Frankfurt Rhine-Main metropolitan region, and the Munich/Augsburg/Ingolstadt metropolplex, they have the potential to significantly speed up travel over short and medium distances.

Bosch's Marcus Parentis also believes in the growing market opportunities. "Compared to today's means of transportation, flying taxis save time on trips of 10 kilometers or more, with a maximum range of up to 300 kilometers. "We are talking to air taxi manufacturers from the aerospace and automotive industries, as well as with start-ups that build air vehicles and are looking to provide sharing services," Parentis says. "The question isn't whether flying taxis will become reality, but when."

More information:

Dóra Domokos

Phone: +36 1 879-8928

Basic information:

Mobility Solutions is the largest Bosch Group business sector. It generated sales of 47,6 billion euros in 2018, and thus contributed 61 percent of total sales from operations. This makes the Bosch Group one of the leading automotive suppliers. The Mobility Solutions business sector pursues a vision of mobility that is accident-free, emissions-free, and stress-free, and combines the group's expertise in the domains of automation, electrification, and connectivity. For its customers, the outcome is integrated mobility solutions. The business sector's main areas of activity are injection technology and powertrain peripherals for internal-combustion engines, diverse solutions for powertrain electrification, vehicle safety systems, driver-assistance and automated functions, technology for user-friendly infotainment as well as vehicle-to-vehicle and vehicle-to-infrastructure communication, repair-shop concepts, and technology and services for the automotive aftermarket. Bosch is synonymous with important automotive innovations, such as electronic engine management, the ESP anti-skid system, and common-rail diesel technology.

The Bosch Group is a leading global supplier of technology and services. It employs roughly 410,000 associates worldwide (as of December 31, 2018). The company generated sales of 78.5 billion euros in 2018. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and connected manufacturing. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to deliver innovations for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 460 subsidiary and regional companies in over 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At nearly 130 locations across the globe, Bosch employs some 68,700 associates in research and development.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com, www.twitter.com/BoschPresse