

## Zephyr 2021 Test Flight Campaign Details

The 2021 test flight campaign was delivered by an international Airbus team from the United Kingdom, the United States, France, Germany, Spain and Australia.

The summer campaign started with four Low Level Test Article (LLTA) flights which allowed further flight testing of new design upgrades, operation of multiple aircraft, agile operations and crew training. These used an aircraft a third of the size of a Zephyr S.

Notably, the campaign continued to achieve two stratospheric flights with full sized Zephyr aircraft. The first carried test equipment which enabled analysis, and improvements to be made on Zephyr's flight envelope, structural integrity, and performance in various atmospheric conditions. It successfully launched at 06:39 local time on Friday 16 July 2021 and ascended directly to the stratosphere. It landed back on 3rd August, some 17 days, 23 hours and 39 minutes later.

The second stratospheric test flight was a flight for the UK Ministry of Defence. It successfully launched on 25 August at 05:51 local time and landed Monday 13 September at 04:21, registering a flight of 18 days 22 hours and 30 minutes.

This customer flight achieved several program goals and Zephyr yet again achieved several firsts. It achieved a new absolute altitude record for this class of UAS at 76,100ft GPS altitude; a record that is logged with the Fédération Aéronautique Internationale. The teams focus on altitude signals Zephyr's ability to remain in the stratosphere day and night, flying above potential bad weather, and above controlled airspace.

Zephyr also flew inside US National Airspace System (NAS) for the first time. With approval from the FAA and following an agreed flight path, Zephyr flew outside of the test range and outside of restricted airspace. Flying in the US NAS and testing its OPAZ payload marks a significant milestone for Zephyr S as it demonstrates true operational capability.

Zephyr carried an OPAZ payload which was able to capture Earth observation data during the flight and download to a deployable ground control station both inside and outside the test range. OPAZ is an Earth observation sensor capable of acquiring imagery from the stratosphere. Specifically designed to fly onboard Zephyr, OPAZ is able to provide both images and real-time videos at 18cm resolution, for months at a time. During the flight OPAZ captured more than 20,000 images within and outside the test range for demonstration of operational use cases.

Operating in the stratosphere at an average altitude of 70,000 feet / 21 kilometers, the ultra-lightweight Zephyr has a wingspan of 25 meters and a weight of less than 75kg, and flies above weather (clouds, jet streams) and above regular air traffic, covering local or regional footprints.

Not quite an aircraft and not quite a satellite, but incorporating aspects of both, the Zephyr has the persistence of a satellite with the flexibility of a UAV. The only civil aircraft that used to fly at this altitude was Concorde and only the famous military U2 and SR-71 Blackbird could operate at similar levels.

Follow us



If you wish to update your preferences to Airbus Communications, [media@airbus.com](mailto:media@airbus.com)  
If you no longer wish to receive communications from Airbus, [media@airbus.com](mailto:media@airbus.com)