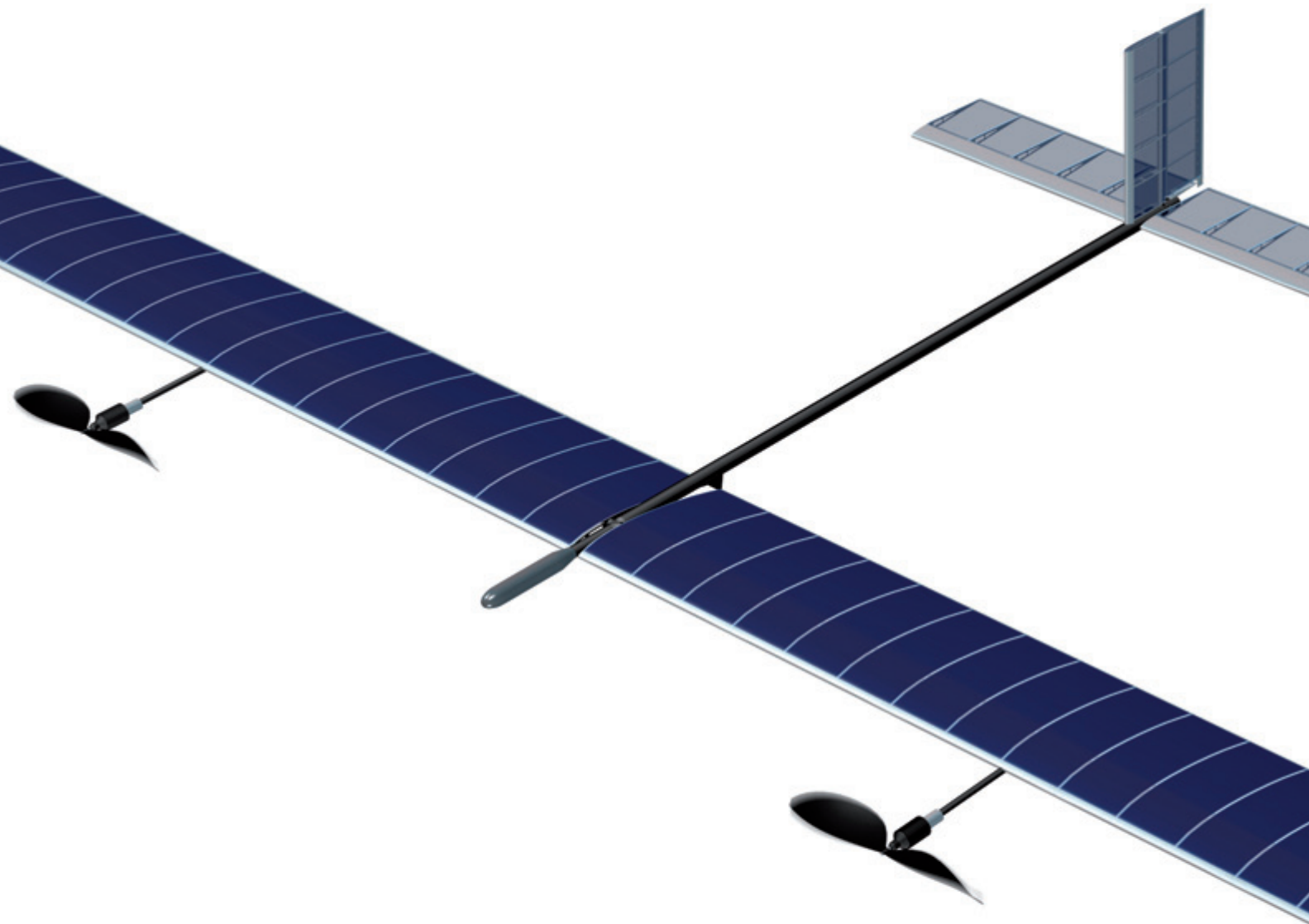


Breakthrough unmanned
aerial surveillance technology.

Zephyr[®]



The Zephyr® high altitude, long endurance unmanned aerial vehicle. An uninterrupted bird's eye view.

Zephyr is designed to operate at altitudes in excess of 18km, with solar electric power and low-drag aerodynamics that can keep it airborne for months on end. Its on-board systems can guide it to within a metre of a target location, at a fraction of the cost of space based, manned or low level UAVs. This manoeuvrability, continuous operation and unobtrusive presence make it an ideal means to support alternative payloads for surveillance, communications and continuous, high quality remote sensing for a variety of civil and military applications.

As part of flight trials funded by the UK Ministry of Defence and the US Department of Defense, Zephyr has made aeronautical history by exceeding the world record for the longest duration unmanned flight. At Yuma Proving Ground, Arizona in July 2008 the aircraft flew for 82 hours, reaching an altitude of 62,000 feet.



Ultra lightweight, hand launched construction

Zephyr's ultra light carbon fibre construction gives it a broad wingspan of up to 22 metres, yet a weight of only 40kg. Its solar power comes from amorphous silicon arrays that are no thicker than sheets of paper, covering the aircraft's wings. They charge its lithium sulphur batteries during daylight, which store energy to keep it aloft at night. The weight savings achieved add to Zephyr's versatility by making it easy to launch by hand without the need for a prepared location or launch mechanisms.

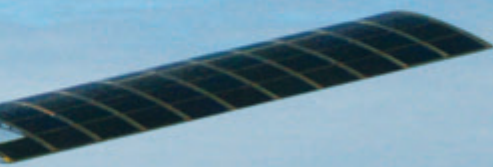
Unmanned
High altitude
Long distance
Endurance





“The possibilities suggested by unmanned flight are truly exciting and with these trials Zephyr has secured its place in the history of UAV development.”

Paul Davey – QinetiQ Zephyr Business Development Director



Zephyr HALE UAV in action

In a world where long term flight endurance is currently measured in hours, the development of Zephyr has created a future filled with possibilities.

A variety of roles

Wide area security

Long endurance surveillance

Communications relay

Stratospheric science missions

Affordable remote sensing with lowest cost persistent ISTAR

In-situ measurement

Network infrastructure

Unobtrusive operation

Technology

Multi day flight achieved through solar electric power from lithium sulphur rechargeable batteries and amorphous silicon solar arrays

Electro-Optic/Infrared (EO/IR) surveillance

Drop sonde deployment

Scalable platform design

Advantages

Lightweight structure enabling long distance non-stop flight

Unique propeller design producing a high power to weight ratio

Wing design maximises the use of thermal air currents to reach high altitudes

Flying day and night, with solar energy recharging batteries during daylight

Hand launched with no special mechanisms

Environmentally friendly

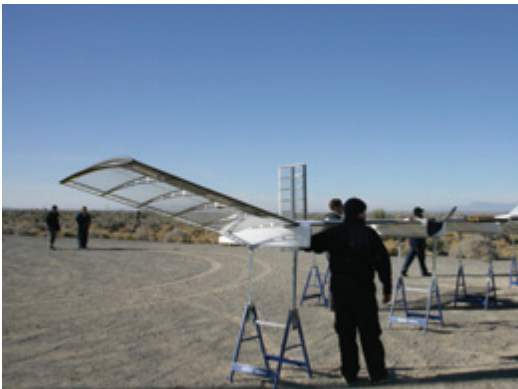
Silent running

Precise autopilot control

Flying at over 60,000 feet, with batteries capable of keeping it airborne for months at a time, Zephyr can rise above normal commercial air-lanes and most weather conditions. Its bespoke QinetiQ developed autopilot allows it to navigate between waypoints and over very long distances, with no need for permanent manual control.

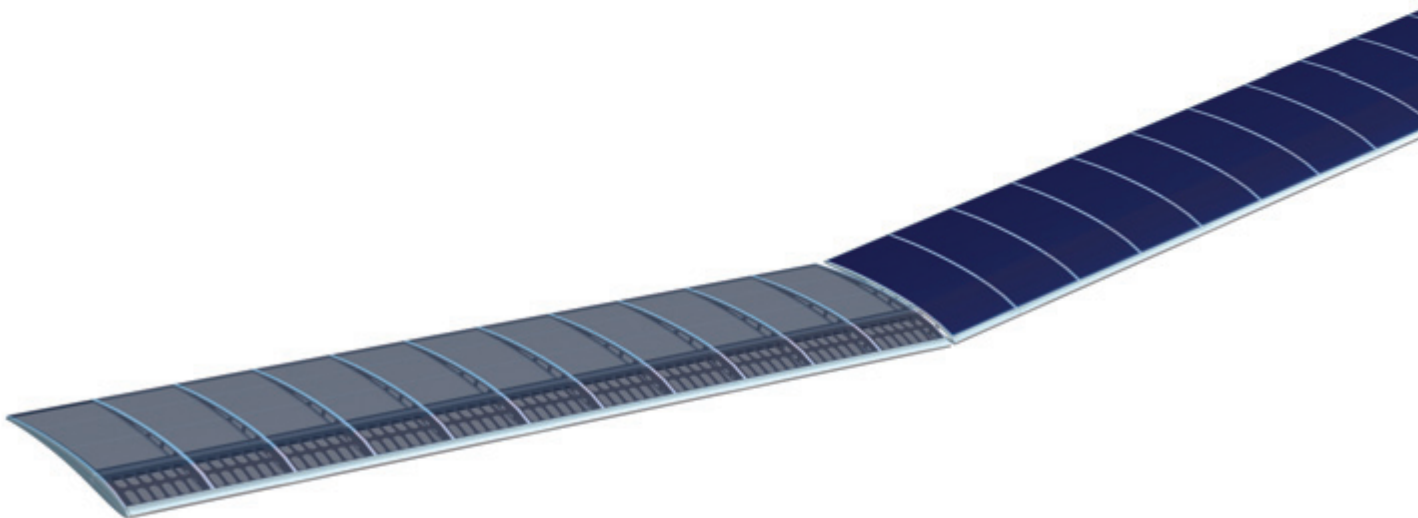
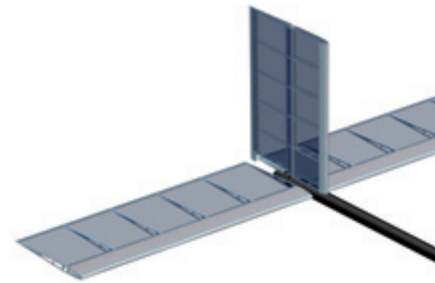
Proven capability

EO/IR camera packs and communications relay packages have been developed and tested under extreme conditions. Prior to its record-breaking flight, earlier tests were successfully conducted in the high desert of New Mexico. In this hostile environment, in the debilitating heat of summer and with thunderstorms all around, Zephyr proved itself capable of standing up to the most gruelling conditions – an important factor in military or weather monitoring applications.



Multiple applications

The potential of Zephyr is growing all the time. Its low cost, silent, unobtrusive operation and payload potential make it a valuable observation and communications resource for military use. But just as exciting is its civil potential for exploration, monitoring weather conditions, drop sonde deployment and even stratospheric science missions.



A far-sighted approach from a visionary company

QinetiQ has a global reputation for turning ideas into inspired realities. In defence, security and energy & environment, our groundbreaking technologies are relied on every day, all over the world. Zephyr is a record-breaking example of how our hand-picked teams of some of the world's best engineers and scientists successfully apply themselves to producing breakthrough UAV solutions.

Customer Contact Team
QinetiQ
Cody Technology Park
Ively Road Farnborough
Hampshire GU14 0LX
United Kingdom
Tel +44 (0) 8700 100 942
www.QinetiQ.com/Zephyr

QinetiQ

© Copyright QinetiQ Ltd 2009
QinetiQ/CF/SS/PUB0900021

Zephyr is a registered trade mark of QinetiQ Limited